



PROPOSED AUSTRALIAN ANIMAL WELFARE STANDARDS AND GUIDELINES

SHEEP

Consultation Regulation Impact Statement

**Edition One
Version 1.0
1 March 2013**

This Regulation Impact Statement (RIS) has been prepared to fulfil the requirements of the Council of Australian Governments, and to facilitate public consultation on the proposed Australian Animal Welfare Standards and Guidelines for Sheep.

A copy of the proposed standards and guidelines is provided as an Appendix to this RIS.

Public comments and submissions are invited on the proposed standards and guidelines, in response to information provided in this RIS. Submissions can be made via the website, email, fax or post.

Animal Health Australia prefers respondents to forward written comments electronically. Please use the web based opinion survey form to register your comments at the following site: <http://www.animalwelfarestandards.net.au/>

Email sheep submissions to publicconssheep@animalwelfarestandards.net.au

Fax submissions: 02 6232 5511

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Animal Welfare Standards Public Consultation
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Comments must be received by COB 6 May for consideration.

This document forms part of the Australian Standards and Guidelines for the Welfare of Animals. This report is a stand-alone document:

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Summary

Introduction

This Regulation Impact Statement (RIS) assesses the proposed *Australian Animal Welfare Standards and Guidelines - Sheep* ('the proposed standards'). The proposed standards have been prepared under a system endorsed by all governments through the Ministerial Council process. The development of nationally consistent animal welfare arrangements for various industry sectors has been identified as a major priority under the Australian Animal Welfare Strategy (AAWS). The AAWS has identified enhanced national consistency in regulation and sustainable improvements in animal welfare based on science, national and international benchmarks and changing community standards, as areas of priority effort.

The purpose of the proposed standards is to set standards for the welfare of all sheep, in all types of farming enterprises in Australia from extensive grazing to fully housed systems.¹ They will apply to all those with responsibilities for the care and management of sheep, including those in both the wool and sheep meat industries. It is intended that the proposed standards will replace the existing *Model Code of Practice for the Welfare of Animals – Sheep*² ('the existing MCOP').

Sheep have historically been important in the development of Australian agriculture. The size of the Australian sheep flock varies from around 180 million to 68 million head according to climate and market conditions. In 2011/12 there were 73.1 million sheep, generally located in the south of Australia. They are grazed on varying sized operations, from small farms to large extensive properties, on native and improved pastures or on crops and stubbles. The sheep industry is organised into two sectors: wool production and sheep meat with much dual purpose production. Dairy is not a significant element; and lot feeding is covered by the sheep meat sector.

Under constitutional arrangements, the primary responsibility for animal welfare within Australia rests with individual states and territories, which exercise legislative control through 'prevention of cruelty to animals Acts' and other legislation as outlined in Appendix 4 of this RIS. Most jurisdictions have codes of practice under their legislation setting standards and/or guidelines for the welfare of animals.

The Australian Government plays a leadership role and has specific powers in relation to external trade and treaties that encompass some animal welfare issues. The Australian Government is responsible for export policy and government-to-government trade facilitation, the regulation of the livestock export industry, including licensing livestock exporters, and issuing export permits and health certificates certifying that livestock meet importing country requirements.

¹ Including pet sheep, show sheep and those used to keep grass low e.g. in house paddocks.

² Primary Industries Standing Committee, 2006.

The policy development process and consultation to date

Extensive consultation has taken place with government agencies, researchers, industry and animal welfare organisations in the development of the proposed standards. The proposed standards were developed under the auspices of the former Animal Welfare Committee (AWC), which is ultimately responsible to the Standing Council on Primary Industries (SCoPI). Membership of AWC at that stage comprised representatives from each of the State and Territory departments with responsibility for animal welfare, CSIRO, and the Commonwealth Department of Agriculture, Fisheries and Forestry - Australia.

Development of the proposed standards and guidelines was initially undertaken by a small writing group comprising research, government and industry representatives; supported by a widely representative Standards Reference Group (SRG). The SRG comprises representatives of national organisations representing the livestock transport industry, the production, saleyard, feedlot and processing sectors of the sheep industry, animal welfare organisations, state and federal regulators, policy specialists and technical experts.

At the SRG meetings in 2009 and 2010, alternative positions and views were expressed by governments, industry and animal welfare organisations regarding the need to consider various practicable alternatives, resulting in a provisional list of variations to the proposed standards. This list was prioritised and narrowed to six variations by the Animal Welfare Committee, on the basis of contentious issues that might provide further improvements in animal welfare, but before the costs of such improvements had been estimated.

The publication of this Consultation RIS is the final step in the consultation process, where the general community and consumers, as well as interested stakeholders have an opportunity to comment on the proposed standards, their variations and the RIS in general. The public consultation seeks the views and advice of interested parties in further formulating a preferred national regulatory framework. Selected additional and feasible variations to the proposed standards that may arise via the consultation process may be investigated and reported in the Decision RIS.

Public input of information and opinions is specifically encouraged via a series of public consultation questions interspersed at appropriate points within the text of this RIS; and collated in Appendix 7.

After a 60-day period of public consultation, adjustments will be made to the standards by consensus of the Standards Reference Group. The Decision RIS will address the responses to submissions made during public consultation. The revised standards will then be submitted for endorsement by SCoPI.

The intent of preparing the proposed national standards is to replace relevant existing standards, if and when adopted by SCoPI. The method of implementation is a matter for each jurisdiction according to the provisions of their own enabling legislation.

The problems and policy objective

The proposed national standards are not starting from a zero base. They are not introducing national standards for the first time – they are replacing inadequate, confusing and inconsistent existing statements in MCOPs (refer to Part 1.2.3.3 of this RIS).

The main problems underlying the development of the proposed national standards are those relating to:

- *Risks to the welfare of sheep* due to deficiencies in the existing MCOP for the welfare of sheep; and to a lesser extent
- *Uncertainty for industry* due to a lack of clear and verifiable standards; and
- *Excess regulatory burden* arising from a lack of national consistency and unnecessary standards.

The primary problem being addressed by the proposed standards and alternative options is overall risks to animal welfare arising from inadequacies of the existing MCOP. Excess regulatory burden arising from regulatory differences between the jurisdictions and unnecessary existing standards, whilst relevant, is a comparatively minor and secondary problem in this RIS.

The main areas of direct concern to sheep welfare are in relation to painful husbandry procedures. The mulesing procedure and associated welfare impacts are of most concern in this RIS; however other painful husbandry procedures discussed include tail docking, castration and laparoscopic artificial insemination (LAI). The number of sheep that could be affected by current poor practices in regards to mulesing, tail docking and castration are potentially significant; however, the extent of such practices is currently unknown. This RIS is seeking greater information from industry and other stakeholders in order to ascertain the magnitude of the problem.

Other areas of welfare concern are: tethering, dog bites, inadequately cleaned sheds, excessive wool length, teeth grinding and trimming, inappropriate use of electric prodders and pizzle dropping. This RIS is seeking greater information on these issues from industry and other stakeholders in order to ascertain the magnitude of the problem.

The lesser concerns, associated with uncertainty for industry due to a lack of clear and verifiable standards and excess regulatory burden arising from a lack of national consistency and unnecessary standards, are problems that may affect certain businesses and jurisdictions.

However the number of businesses affected is unknown and hence the extent of the problem, while considered minor, is also unknown. Information on the number of businesses operating under different codes across multiple jurisdictions that are facing excess regulatory burden, where not currently available, is sought via the public consultation process.

In addition, a lack of consistency in animal welfare standards makes it difficult for industries to develop and maintain national quality assurance (QA) schemes.

Livestock industries have not found the existing model codes useful as communication vehicles because of their inconsistent, complex and often confusing mixture of standards and guidelines (refer to Part 2.1.2 of this RIS).

The following overarching policy objective is identified in this RIS:

To minimise risks to sheep welfare and to reduce regulatory burden in a way that is practical for implementation and industry compliance.

The Options

As discussed in the section above on the policy development process and consultation to date, the SRG meetings in 2009 and 2010 considered a number of alternative positions and views expressed by governments, industry and animal welfare organisations. A list was prioritised and narrowed by the Animal Welfare Committee comprising feasible options, and included variations that were considered contentious but that might provide further benefits in animal welfare.

Public education campaigns have been considered as an alternative to national standards. However, they are likely to be ineffective and therefore not a practicable alternative. Non-compliance with animal welfare standards is usually limited to a very small number of farmers who are less likely to be influenced by public education campaigns than by enforceable standards.

As discussed in Part 2.1.2 of this RIS, there is a lack of information in the market place, as consumers of wool and sheep meat are not aware of the welfare status of the sheep used to produce the products they are buying. However, even if such consumer information were available, the market share for other animal welfare-related products indicates that only a small percentage of consumers would be likely to be influenced in their purchasing decisions. Thus better consumer information is not a practical alternative to welfare standards and guidelines.

In arriving at the proposed standards and variations to be examined, and the preliminary and indicative impact analysis undertaken in this RIS, the public consultation seeks the views and advice of interested parties in the further formulation of variations to the existing proposals.

The options and variations evaluated in terms of costs and benefits considered were:

- **Option A:** converting the proposed national standards into national voluntary guidelines (the minimum intervention option);
- **Option B:** the proposed national standards as currently drafted;
- **Option C:** one or more variations of the proposed national standards as follows:
 - *Variation C1:* All mulesing with pain relief
 - *Variation C2:* Restrict mulesing age to less than 6 months of age

- *Variation C3*: Single penning for wool production ban
- *Variation C4*: Tethering ban
- *Variation C5*: Mandate pain relief for laparoscopic LAI and ET
- *Variation C6*: Require docked tails to have at least one free palpable joint.

It is intended that after public consultation, Option C will entail one or more variations of Option B – Variations C1 to C6, which unlike options A and B are not mutually exclusive. Variations C1 to C6 would each involve the issuing and promotion of national standards (same as Option B), to be reviewed once every 5 years by SCoPI. These proposed national standards would become regulations and would be mandatory. Like Option B, any such variations of the mandatory national standards would also replace relevant state or territory codes of practice that currently exist under the ‘base case’.

Impact analysis

This Consultation RIS has attempted to undertake a formal cost-benefit analysis. However, comparing the costs and benefits against the ‘base case’ has been hindered by an inherent inability to quantify benefits to animal welfare. This is particularly important for mulesing, tail docking and castration procedures, which may affect a large number of sheep as illustrated in the Table below.

Welfare issues under Option B	Number of sheep affected
Inspection of sheep at intervals	% of 70,754,293
Handle sheep in a reasonable manner	% of 73,098,762
Dog that habitually bites is muzzled	Unknown (minor)
Sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
Consider the welfare of sheep when using an electric prod	Unknown
Must not trim or grind the teeth of sheep	Unknown (minor)
No pizzle dropping	Unknown (minor)
Sheep that are tethered are able to exercise daily	1,250
Tail docking with skilled practitioner or under supervision	% of 33,289,264
Castration with skilled practitioner or under supervision	% of 16,644,632
At least two palpable free joints remaining with tail docked sheep	% of 33,289,264
AI or ET performed by veterinarian or under veterinary supervision only	150,000
Faeces and urine must not compromise the welfare of a sheep	50

However, while the number of sheep affected by risks to animal welfare from various practices may seem as an obvious measure – such a measure fails to take into consideration a) whether or not a practice is ongoing and b) the impact of the procedure or practice. That is to say, simply providing for the number of animals affected does not provide any information regarding the duration of the effect nor the impact of the effect on the animal. For example, mulesing, castration and tail docking are more serious welfare issues than tethering or single penning, although the latter two practices may occur over the lifetime of the sheep, as opposed to just a one-off occurrence. Therefore, the combination of factors that determine the *severity of the consequence* include:

- Number of animals affected (small or large);

- Duration of practice (one-off or ongoing); and
- Impact of animal husbandry procedure (primarily invasive or less-invasive).

Notwithstanding this caveat, the number of sheep affected by each practice or procedure is discussed *only* where there is certainty or where there are robust assumptions based on experience in the industry. There is in many cases a large degree of uncertainty surrounding the number of sheep affected, due to lack of data or history of experience. In these cases, the number of sheep affected is not provided in this Consultation RIS. Instead, such information is sought via the consultation questions in this RIS.

On this basis, the preliminary and indicative impact analysis presented in this RIS should be considered with caution, especially given the existing unknowns in relation to sheep welfare and the number/impact and duration of various procedures or practices. In this respect, a complete analysis and “matching” of costs and benefits for each option/variation is not possible. However, better linkages between costs and benefits, and input via the consultation process, is expected to result in improved qualitative and quantitative impact analysis for the Decision RIS.

Notwithstanding the constraints, both qualitative and quantitative impacts have been considered and the following evaluation criteria have been used to assess the impacts:

- Animal welfare benefits;
- Reduction in regulatory burden; and
- Net compliance costs to industry and government.

The Table below attempts to summarise the qualitative and quantitative impacts for each of the options/variations presented in the RIS. The likely animal welfare benefits of the proposed national standards (Option B and Variations C1 to C6), whilst unquantifiable, are all likely to produce minor to significant welfare improvements over the base case and Option A (voluntary guidelines in lieu of mandatory standards). Variation C6 would not provide any additional welfare benefit over Option B as there is no documented welfare difference in going from one to three palpable joints when tail docking.

While Option B is estimated to result in quantifiable net benefit of less than \$1 million in present terms over 10 years, this figure does not take into account the potential unquantifiable welfare benefits that could be significant, especially in relation to tail docking and castration.

Variation C1 would be likely to provide significant unquantifiable welfare benefits over and above Option B and other Variations C2 to C6 – as it would affect an estimated 4.86 million lambs each year and would provide pain relief for the very invasive mulesing procedure. On the other hand, Variation C1 would entail the highest quantifiable costs (\$32.28 million over 10 years) of all the alternatives. However, as discussed above, it is difficult to assess and match the relative welfare benefits and costs for each option/variation so that policy makers have a clear picture of the expected net benefits of the proposed reforms. In the case of variation C1, it would be misleading to focus on the quantifiable costs only, without better appreciation of the unquantifiable welfare benefits.

There is no significant interdependency between the individual variations. However, if Variations C1 and C2 are adopted (both relate to mulesing), there is not likely to be a reduction in the total number of sheep mulesed to comply with the new standards. Tethering and single penning in sheds are not interchangeable practices and are done for very different reasons. It is believed that a restriction on one practice will not result in an increase in the other. However, it is feasible (for Ministers) to adopt a complementary combination of variations (C1 to C6) amongst those proposed or any additional variations that may be agreed to be analysed after the public consultation.

Table 21: Incremental 10-year costs and benefits of Options A and B and Variations C1 to C2 relative to the base case – 2012-13 dollars (\$m)

Option/Variation	I. Incremental Animal welfare benefits (unquantifiable)	Number of sheep affected under Criterion I	II. Reduction in regulatory burden (quantifiable)	II. Reduction in regulatory burden (unquantifiable)	III. Incremental compliance costs to sheep farmers (quantifiable)	Incremental Quantifiable net benefit
Option A (guidelines)	< B	A small undetermined % of 73.1m	\$0	< B	\$0	\$0
Option B (Proposed national standards)	> A	A larger undetermined % of 73.1m	\$2.66	> A	\$1.98	\$0.68
Variation C1 (All mulesing with pain relief)	> B	As with Option B + 4.86m	\$2.66	= B	\$32.28	-\$29.62
Variation C2 (Restriction of mulesing to less than 6 months of age)	> B	As with Option B + 30k	\$2.66	= B	\$3.54	-\$0.89
Variation C3 (Banning tethering)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68
Variation C4 (Banning of single pen shedding of sheep)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68
Variation C5 (All LAI and ET with pain relief)	> B	As with Option B +150k	\$2.66	= B	\$3.52	-\$0.87
Variation C6 (Requirement for one palpable joint)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68

The public consultation seeks the views and advice of interested parties in the further formulation of variations to the existing proposals. Selected additional variations may be investigated and reported in the Decision RIS.

The public consultation seeks the views and advice of interested parties in providing information and data that would further assist in the assessment of the impacts (costs and benefits) expected under each of the options/variations.

The basis of the selection of the preferred option is the one that generates the greatest net benefit for the community. This step has been postponed awaiting

response from the public consultation on the options and variations considered in this RIS.

There will then be a final cost/benefit comparison between Options A, B and C with a view to making a recommendation on a preferred option to SCoPI as part of the Decision RIS.

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1.0 Background

1.1. Introduction

This Regulation Impact Statement (RIS) assesses the proposed *Australian Animal Welfare Standards and Guidelines - Sheep* ('the proposed standards'); and should be read in conjunction with that document. These proposed standards have been prepared under a system endorsed by all governments through the Ministerial Council process. The development of nationally consistent animal welfare arrangements for various industry sectors has been identified as a major priority under the Australian Animal Welfare Strategy (AAWS).

Under the AAWS National Implementation Plan, Animal Health Australia (AHA) has been appointed as the project manager for the conversion of the existing livestock model codes into standards that can be regulated. The method to develop the proposed standards was defined in the AHA business plan for the project, following extensive stakeholder consultation and consideration of a review of the existing codes of practice in 2005.

The purpose of the proposed standards is to set standards for the welfare of all sheep, in all types of farming enterprises in Australia from extensive grazing to fully housed systems.³ They will apply to all those with responsibilities for the care and management of sheep, including those in both the wool and sheepmeat industries. It is intended that the proposed standards will replace the existing *Model Code of Practice for the Welfare of Animals – Sheep*⁴ ('the existing code'). The proposed standards and guidelines should be read in conjunction with other requirements for sheep farming, and with related Commonwealth, state and territory legislation (refer to Appendix 4 of this RIS).

The proposed standards are complemented by guidelines providing advice and/or recommendations to achieve desirable animal welfare outcomes. It is not intended that compliance with the guidelines will be made mandatory by law.

On the other hand, the proposed standards, if endorsed by the Standing Council on Primary Industries (SCoPI), are intended to be adopted or incorporated into regulations by the various jurisdictions, after which compliance with the standards will become mandatory. For evaluation purposes, this RIS treats the proposed standards as if they are mandatory;⁵ uses relevant existing Australian legislation, standards⁶ and industry practices as the base case for measurement of incremental costs and benefits (see Part 4.2 of this RIS).

The RIS is required to comply⁷ with the *Best Practice Regulation - A Guide for Ministerial Councils and National standard Setting Bodies* as endorsed by the Council of Australian Governments (COAG) in October 2007. COAG has agreed that all governments will ensure that regulatory processes in their jurisdiction are consistent with the following principles:

1. Establishing a case for action before addressing a problem;
2. A range of feasible policy options must be considered, including self-regulatory, co-regulatory and non-regulatory approaches, and their benefits and costs assessed;
3. Adopting the option that generates the greatest net benefit for the community;
4. In accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:-
 - a. The benefits of the restrictions to the community as a whole outweigh the costs, and
 - b. the objectives of the regulation can only be achieved by restricting competition;

³ Including pet sheep, show sheep and those used to keep grass low e.g. in house paddocks.

⁴ Primary Industries Standing Committee, 2006.

⁵ No costs are imposed if compliance with standards is voluntary.

⁶ 'Must' statements or practices specified as unacceptable in government codes of practice.

⁷ As independently assessed by the Commonwealth Office of Best Practice Regulation (OBPR).

5. Providing effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear;
6. Ensuring that regulation remains relevant and effective over time;
7. Consulting effectively with affected key stakeholders at all stages of the regulatory cycle; and
8. Government action should be effective and proportional to the issue being addressed.

Accordingly, the RIS contains information on –

- The nature and extent of the relevant problems that need to be addressed; the policy objectives of proposed solutions to the problems;
- Key stakeholder consultation to date; and proposed public consultation;
- Feasible alternative options to the proposed standards and why other alternatives are not feasible;
- Analysis of relevant existing legislation and standards in both Australia and internationally (to establish the base case);
- A cost-benefit evaluation of the proposed standards and alternative policy options; relative to the base case;
- Selection of one or more preferred options that generate the greatest net benefit for the community;
- Nature and effects of the preferred option including on competition; and
- Implementation and review processes.

The RIS process is divided into two phases. **Phase 1** is to prepare a Consultation RIS for public consultation. **Phase 2** is to prepare a comprehensive Decision RIS for SCoPI, taking into account public submissions.

It should be emphasised that this RIS is limited to evaluating the proposed national standards, and not Commonwealth or state legislation or other standards or codes of practice. However, the following relevant background information may be helpful to interested parties in understanding the proposed standards within their legislative, economic, national and international contexts.

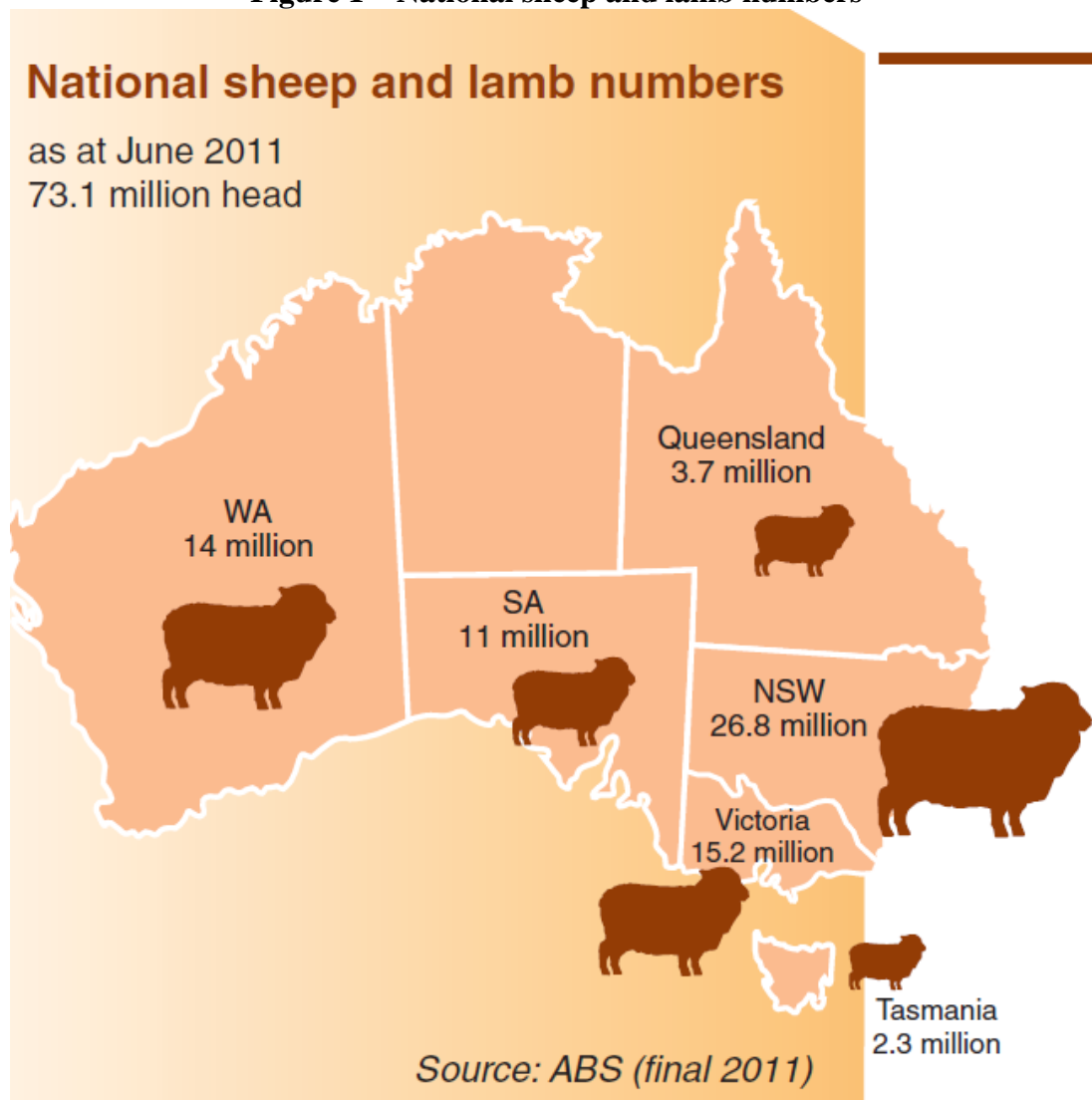
1.2. Setting the scene

1.2.1 Overview of the Australian sheep industries

To set the scene for this RIS, the following overview of the Australian sheep industries has been obtained via Meat and Livestock Australia (MLA), Australian Wool Innovation (AWI) and the Cooperative Research Centre for Sheep Industry Innovation (Sheep CRC). The various facts and figures are based on MLA/AWI/DAFF/ABS/ABARE⁸ 2010-11 data unless otherwise stated.

Sheep have historically been important in the development of Australian agriculture. The size of the Australian sheep flock varies from around 180 million to 68 million according to climate and market conditions. In 2010/11 there were 68.1 million sheep, generally located in the south of Australia. In 2011/12 this number had grown to 73.1 million, as shown in Figure 1. They are grazed on varying sized operations, from small farms to large extensive properties, on native and improved pastures or on crops and stubbles.

Figure 1 – National sheep and lamb numbers



Graphic courtesy of Meat and Livestock Australia.

⁸ Refer to glossary.

The sheep industry is organised into two sectors: wool production and sheep meat with much dual purpose production. Sheep dairy is not a significant element; and lot feeding is covered by the sheep meat sector.

Wool industry

Australia is the world's number one producer of premium quality fine wool, and is the largest producer of all wools by value and volume. Wool was Australia's third largest agricultural export in 2010-11 behind wheat and beef, valued at \$3.05 billion⁹ and making up approximately 5 per cent of total farm exports. Australia exports wool to 52 countries with the biggest market being China, which takes around 65 per cent of the national clip.

The Australian wool production industry is based on the Merino breed and this is still the largest component of the Australian wool production industry. A very small sector of the wool industry produces ultrafine wool from housed sheep.

Sheepmeat industry

Australia is one of the world's leading producers of lamb and mutton, the largest exporter of mutton and live sheep, and second largest exporter of lamb. The gross value of Australian sheep, lamb and live sheep production is around \$2.7 billion.¹⁰

The value of total lamb exports in 2011-12 was \$1.094 billion and mutton exports \$401 million. Australian live sheep exports were valued at \$345 million in 2010-11. The lamb and sheep industry (including live sheep) contributed around 3% to the value of total Australian farm exports in 2011-12. The Middle East is the biggest Australian market for lamb exports (25%) and mutton exports (48%).

The sheep meat flock comprises a variety of breeds and cross breeds for the production of high quality prime lambs. The use of controlled grazing systems and intensive lamb finishing for the production of sheep for meat is a minority production system but is increasing.

1.2.2 Animal welfare issues

Animal welfare concerns are becoming increasingly important to industry, government, consumers and the general public, both in Australia and internationally. Practices which may have once been deemed acceptable are now being reassessed in light of new knowledge and changing attitudes.

'Animal welfare' is a difficult term to define and has several dimensions including the mental and physical aspects of the animal's well-being, as well as people's subjective ethical preferences.¹¹

Under the Australian Animal Welfare Strategy (AAWS), Australia accepts the agreed international definition of animal welfare from the World Organisation for Animal Health (OIE):

Animal welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to

⁹ http://www.daff.gov.au/_data/assets/pdf_file/0003/2161173/at-a-glance-june2012.pdf

¹⁰ ABARE 2011-12

¹¹ Productivity Commission, 1998

the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.¹²

In accordance with this definition and with long-established welfare science principles, it is important when dealing with animal welfare to separate factual considerations of welfare from attitudes and moral judgments about what is appropriate (ethics).¹³ Two leading UK researchers note:

If people feel that it is important to try to change the laws about the treatment of animals, they must have more to go on than just their intuition. 'Suffering' must be recognisable in some objective way. Otherwise the laws which emerge are almost bound to be arbitrary and might even fail to improve the lot of animals much, if at all. (Dawkins, 1980, p. 2)¹⁴

We should use the word 'welfare' in a scientific way so that it is useful when considering animal management or when phrasing legislation. Welfare is a characteristic of an animal, not something given to it, and can be measured using an array of indicators. (Broom 1991, p. 4174)¹⁵

Animal welfare science seeks to determine the real needs of the animal. Welfare can be measured using an array of objective indicators, such as the level of cortisol in the blood as an indicator of stress. Animal psychology can also be used to determine actual animal preferences, rather than human preferences on behalf of the animal.

Accordingly, this RIS does not deal with perceived benefits of the options; but rather looks strictly at factual considerations, based on scientific evidence where available.

1.2.3 Relevant legislation, standards and guidelines

1.2.3.1 Responsibilities of governments

Animal welfare legislation provides a balance between the competing views in the community about the use of animals. The successful pursuit of many industries involving animals is dependent on community confidence in the regulation of animal welfare.

Under constitutional arrangements, the primary responsibility for animal welfare within Australia rests with individual states and territories, which exercise legislative control through 'prevention of cruelty to animals Acts' and other legislation as outlined in Appendix 4 of this RIS. All jurisdictions have codes of practice under their legislation setting standards and/or guidelines for the welfare of animals. They all have the power to make compliance with animal welfare standards mandatory. They can either make regulations to require compliance with specified standards or they can incorporate the requirements of standards into the regulations themselves.

The Australian Government plays a leadership role and has specific powers in relation to external trade and treaties that encompass some animal welfare issues. The Australian Government is responsible for export policy and government-to-government trade facilitation, the regulation of the livestock export industry, including licensing livestock exporters, and issuing export permits and health certificates certifying that livestock meet importing country requirements. These responsibilities directly affect the sheep industries.

The Australian Government also provides support for and helps to coordinate new developments, projects and legislation under the Australian Animal Welfare Strategy (see below).

The main method of dealing with animal welfare issues at the national level to date has been through the development of model codes of practice (now standards) in consultation with

¹² Article 7.1.1.

World Organisation for Animal Health 2010, Terrestrial animal health code. Viewed 10 June 2012.

¹³ Productivity Commission, 1998

¹⁴ Dawkins, M.S., 1980 cited in Productivity Commission, (1998), p.22

¹⁵ Broom, D., 1991 cited in Productivity Commission, (1998), p.22

governments, industry, welfare groups and other stakeholders, for endorsement by the former Primary Industries Ministerial Council (PIMC), now the Standing Council on Primary Industries (SCoPI). The model codes have been used as a guide by the various state and territory governments in the development of their own legislation and codes of practice. As these model codes or standards are developed primarily in recognition of government purposes, they are separate to the various wholly voluntary codes of practice and quality assurance programs that may be developed from time to time by industry associations.

SCoPI consists of the Australian/state/territory and New Zealand government ministers responsible for agriculture, food, fibre, forestry, fisheries and aquaculture and rural adjustment policy. The Council is the peak government forum for consultation, coordination and, where appropriate, integration of action by governments on primary industries issues, including animal health and welfare.

Local governments have responsibility for some areas of public health and animal control (e.g. sheep at large) that can have a significant effect on animal welfare. This includes the provision of feedback to state/territory governments in order to change legislation and for the promotion and maintenance of responsible animal ownership.¹⁶

1.2.3.2 Australian Animal Welfare Strategy

Under COAG arrangements, all Australian/state/territory and New Zealand ministers with responsibility for primary industries matters (including animal welfare) are members of the Standing Council on Primary Industries (SCoPI). This Ministerial Council was formerly known as the Primary Industries Ministerial Council (PIMC).

In 2006, PIMC (now SCoPI) asked the Primary Industries Standing Council to develop a nationally consistent approach to the development, implementation and enforcement of Australian animal welfare standards.

The Australian Animal Welfare Strategy (AAWS)¹⁷ has been developed to outline directions for future improvements in the welfare of animals and to provide national and international communities with an appreciation of animal welfare arrangements in Australia. The AAWS was jointly developed by the Australian Government, state and territory governments, industry and the community, and is co-ordinated by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF). PIMC endorsed the AAWS in May 2004, the first National Implementation Plan for the strategy in May 2006 and the current Strategy and Implementation Plan 2010-14.¹⁸

The AAWS has identified enhanced national consistency in regulation and sustainable improvements in animal welfare based on science, national and international benchmarks and changing community standards as areas of priority effort. Work is now underway to update the Model Codes of Practice and convert them into Australian Animal Welfare Standards and Guidelines. The new documents will incorporate both national welfare standards and industry guidelines for each species or enterprise. In an effort to comprehensively cover all animal management sectors, new standards and guidelines are also being created where Model Codes of Practice did not exist, such as for exhibited animals.¹⁹

The 2010-2014 AAWS Strategy and Implementation Plan directs the future of animal welfare. Its aim is to assist in the creation of a more consistent and effective animal welfare system in Australia.

¹⁶ Primary Industries Standing Committee, 2011

¹⁷ <<http://www.australiananimalwelfare.com.au/home>>

¹⁸ Primary Industries Standing Committee, 2011

¹⁹ Primary Industries Standing Committee, 2011

The AAWS, through its participants and projects, clarifies the roles and responsibilities of key community, industry and government organisations. The animal welfare system in Australia aims to ensure all animals receive a standard level of care and treatment. The level of care requires that all animals be provided with adequate habitat, handling, sanitation, nutrition, water, veterinary care, and protection from extreme weather conditions and other forms of natural disasters.

1.2.3.3 The Model Codes of Practice (MCOP) Review

For the past 30 years, the welfare of livestock in Australia has been supported by a series of Model Codes of Practice for the Welfare of Animals. As community values and expectations have changed, and our international trading partners have placed greater emphasis on livestock welfare, the usefulness and relevance of these model codes has been called into question; as has the process by which these model codes have been revised and developed.

The purpose of the original model codes was to increase uniformity in the existing state and territory codes of practice and their use of animal welfare legislation. The process used to develop or review a model code was conducted by one of the states or territories in consultation with the others. As there was no official system for developing or reviewing a code there was substantial variation in the quality, consultation (the membership of standards writing groups and the consultation process varied widely), timeliness and content of the codes. The lack of consistency between and within individual codes meant that farmers and workers that operated between jurisdictions were uncertain about their responsibilities in relation to animal welfare. Livestock industries, service providers and animal welfare groups consistently rated this lack of consistency as a major problem and one that need to be given a very high priority for attention. In addition the reviews of codes did not routinely consider contemporary animal welfare science as a basis for a standard or involve the preparation of a rigorous economic impact assessment. Another problem was that the development and review process was unfunded and relied on the in-kind contribution of stakeholders including representatives of state and territory governments and the Federal Government.

To address these issues, Primary Industries Standing Committee (PISC) asked the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) to consider arrangements for reviewing and developing the model codes as a basis for Australia's future livestock welfare regulation. These arrangements were reviewed in 2005²⁰, and a new approach was recommended that would ensure consistency, scientific soundness, appropriate consultation and legal enforceability. The responsibility was handed to AHA to progress the recommendations and to facilitate the development of a preferred approach with government and livestock industry members. This collaborative process resulted in the development of the Australian Animal Welfare Standards and Guidelines Business Plan,²¹ which was endorsed by the Primary industries Ministerial Council (PIMC) 10 in May 2006. Livestock industries and governments agreed to a recommendation to develop standards to be underpinned by legislation and best practice guidelines clearly separated but contextually linked in the same document.

Livestock industries have not found the existing model codes useful as communication vehicles because of their inconsistent, complex and often confusing mixture of standards and guidelines (refer to Part 2.1.2 of this RIS). The new standards will provide greater certainty for all stakeholders, and in particular livestock industries, than the model codes by regulating standards in legislation and by achieving nationally consistent outcomes. Nationally consistent standards and guidelines will promote the development and efficient operation of national Quality Assurance

²⁰ Neumann, 2005

²¹ <<http://www.animalwelfarestandards.net.au/files/2011/01/Animal-Welfare-Standards-and-Guidelines-Development-Business-Plan.pdf>>

(QA) programs. This means that QA schemes will not require different rules for different jurisdictions and that auditing the schemes will be much simpler.

The overall situation within agriculture departments and livestock industry bodies was and is:

There is general agreement about the desirability of having national standards of livestock welfare that are consistently mandated and enforced in all states and territories. The need for improved processes, broader consultation and linkages to industry quality assurance programs also is generally acknowledged. There is broad consensus amongst all governments and peak industry bodies regarding a preferred process for revising and developing new welfare standards and guidelines.²²

The first endorsed Australian animal welfare standards and guidelines development has been the for the land transport of livestock.²³ The plan has been revised and continues to be the basis for the development process for the cattle and sheep welfare standards and guidelines.

1.2.3.4 Role of standards and guidelines

For the purposes of this RIS, and especially the cost/benefit assessment in Part 4.0 of the RIS, it is important to clearly distinguish between standards and guidelines. These terms are defined in the proposed national standards document as follows:

The standards provide the basis for developing and implementing consistent legislation and enforcement across Australia, and direction for all those responsible for sheep. They reflect available scientific knowledge, current practice and community expectations.

The standards and guidelines may be reflected in the industry-based quality-assurance programs that may include sheep welfare provisions.

The position taken by PIMC 15, in May 2009, is that guidelines, regardless of their purpose in existing Codes and the new Standards and Guidelines documents, will not be regulated.

In particular agreement was reached that:

“All future revisions of Model Codes and ‘Australian Standards and Guidelines’ documents must provide a number of:

- a. clear essential requirements (‘standards’) for animal welfare that can be verified and are transferable into legislation for effective regulation, and
- b. guidelines, to be produced concurrently with the standards but not enforced in legislation, to be considered by industry for incorporation into national industry QA along with the standards.”

It is important to note that the standards and guidelines is a dual purpose document serving as the basis for development of regulations (the standards); and also to communicate to the Australian community the acceptable welfare practice and recommendations (guidelines) for better welfare practice. The non-enforcement of the recommendations (guidelines) is a fundamental premise on which industry engagement and support for this process is based. The need for regulatory certainty and stability is important for those that own and invest in livestock.

²² <<http://www.animalwelfarestandards.net.au/files/2011/01/Animal-Welfare-Standards-and-Guidelines-Development-Business-Plan.pdf>>

²³ Ibid

However, the terms ‘best practice’ or ‘better practice’ are not used in the proposed standards document. These are concepts used by industry for business benchmarking purposes, rather than as an enforceable standard or a recommended guideline. ‘Best practice’ is defined in Oxford Dictionaries Online as ‘commercial or professional procedures that are accepted or prescribed as being correct or most effective’.

1.2.3.5 Relevant international standards and guidelines

Animal welfare considerations during sheep farming are the subject of increasing international focus. The following policies and position statements are included to provide a brief international context, while acknowledging that Australia’s sheep production systems vary significantly from production systems, sheep breeds and climatic conditions in other countries.

There are no specific World Organisation for Animal Health (OIE) guidelines relating to sheep farming. The Terrestrial Animal Health Code (2012)²⁴ Volume one General Provisions, Section 7 Animal welfare, has nine chapters of varying degrees of relevance to sheep. Some of the relevant topics for sheep management covered include; animal behaviour, handling and restraint, responsibilities, competency, facilities, environment, hygiene, humane killing for slaughter and disease control purposes, and transport. The OIE Chapter 7.9 Animal Welfare and Beef Cattle Production Guidelines adopted in May 2012, serve as a benchmark for future sheep guidelines. These other guidelines are relevant to the way the Australian Government thinks about regulating its livestock industries and are more relevant than any other laws, standards or guidelines from any other single country. The OIE guidelines set aspirational goals for OIE Member Countries and are regarded as important international norms, regardless of them not being applied through any law. Australia strongly supports the need for OIE Member Countries to comply with the OIE animal welfare guidelines. The expectation of members is that they will achieve the outcomes set out in the OIE guidelines and the proposed Australian welfare standards seek to achieve this outcome.

The acceptable welfare practice for livestock exported from Australia is controlled by the Australian Standards for the Export of Livestock (ASEL), Version 2.3, 2011 and the Exporter Supply Chain Assurance System (ESCAS) regulations²⁵ that are developed directly from the OIE guidelines by the Australian Government in partnership with industry. The ASEL covers from sourcing and on-farm preparation of livestock to their disembarkation in the export destination. In particular ESCAS has produced the *Guidance on Meeting OIE Code Animal Welfare Outcomes, Sheep and Goats, Version 3.3, 21 August 2011*. This document sets out a highly prescriptive performance checklist to facilitate audit of practices in relation to handling, transport, feedlots, lairage and slaughter. The proposed sheep welfare standards are consistent with the relevant aspects of ASEL and ESCAS.

As stated in section 1.2.2, the AAWS has adopted the OIE definition of animal welfare. Australia also further recognises that the treatment that an animal receives covered by other terms such as animal care, animal husbandry, and humane treatment, is also an important part of animal welfare consideration. The proposed sheep standards and guidelines are considered to be entirely consistent with the guiding principles in article 7.1.2, the scientific basis for recommendations in article 7.1.3 and the general principles for the welfare of animals in livestock production systems in article 7.1.4.

A comparison of the proposed national standards with those of comparable countries indicates a general alignment of animal welfare standards – except for various painful husbandry procedures used in Australia such as castration, tail docking and mulesing. These three issues are subject to

²⁴ <<http://www.oie.int/en/international-standard-setting/terrestrial-code/access-online/>> Viewed 4 Jan 2013

²⁵ <<http://www.daff.gov.au/aqis/export/live-animals/livestock/escas>> Viewed 4 Jan 2013

further deliberations in this consultation process, including the provision of three supplementary discussion papers that explain the rationale for the proposed approach for Australia.

NZ and the UK have laws in relation to such procedures; while the EU Member States, of which the UK is but one Member, utilise their own State laws rather than follow a mandated EU Directive.

New Zealand

New Zealand has a common welfare code for sheep and beef cattle.²⁶ Additionally, there is a separate Code of Welfare covering painful husbandry procedures applying to animals including farmed sheep;²⁷ and a Code covering the emergency slaughter of farm livestock.²⁸ Codes of Welfare are deemed to be regulations but only their minimum standards have legal effect. Together, these three codes have similar standards compared with the proposed Australian standards; but it is difficult to compare all aspects because of a difference in approach. The NZ minimum standards combine aspects of mandatory standards statements and recommendations (but the latter are not enforceable in Australia). The proposed Australian standards seek to separate standards and guidelines to deliver clear, essential and verifiable standards and also a wealth of useful recommendations for better animal welfare.

Under the NZ Animal Welfare (Painful Husbandry Procedures) Code of Welfare 23 December 2005 Minimum standard No. 3 – Castration and Shortening of the Scrotum (cryptorchid):

- (a) The method of castration, or shortening of the scrotum, must be chosen, and applied, so as to minimise the acute as well as chronic consequences for the health and welfare of the animal.
- (b) While complying with Minimum standard 2(a), castration, or shortening of the scrotum, without pain relief must be performed when the animals are as young as possible, but not greater than six months of age.
- (c) When castrating or shortening the scrotum of any animal over the age of six months, pain relief must be used.
- (d) When using rubber rings to castrate, they must be placed above the testes and below the teats, and must be of a tension and size appropriate to the animal in order to ensure that blood supply to the testes and scrotum is stopped immediately.
- (e) When shortening the scrotum with rubber rings, they must be placed below the testes taking care not to include the testes within the ring, and they must be of a tension and size appropriate to the animal in order to ensure that blood supply to the scrotum is stopped immediately.
- (f) If high tension bands are used to castrate an animal:
 - (i) local anaesthetic must be used (at any age) to provide pain relief, and
 - (ii) the band must be positioned on the scrotal neck as close to the testes and as far from the abdomen as possible.

Minimum standard No. 4 – Tail docking: Sheep states:

- (a) Tail docking of sheep must only be undertaken when there is a significant risk of faecal and urine contamination, and/or flystrike, that leads to poor hygiene, health and welfare and/or failing to do so adds a significant cost to the farm system.
- (b) When complying with Minimum standard 2(a), a tail docking without pain relief must be performed when the sheep are as young as possible, and not greater than six months of age.
- (c) When tail docking a sheep over six months of age, pain relief must be used.

²⁶ <<http://www.biosecurity.govt.nz/files/regs/animal-welfare/req/codes/sheep-beef-cattle/sheep-beef-code-2010.pdf>>

²⁷ <<http://www.biosecurity.govt.nz/files/regs/animal-welfare/req/codes/painful-husbandry/painful-husbandry.pdf>>

²⁸ <<http://www.biosecurity.govt.nz/animal-welfare/codes/emergency-slaughter/index.htm>>

England

England's *The Welfare of Farmed Animals (England) Regulations 2007* contains mandatory standards for the welfare of farmed animals including sheep. The *Mutilations (Permitted Procedures) (England) Regulations 2007* at Schedule 2 contains mandatory standards regarding painful husbandry procedures on sheep.²⁹ England makes standards mandatory by according them Regulation status.

Under the *Veterinary Surgeons Act 1966*, as amended, only a veterinary surgeon may dehorn or disbud a sheep, apart from trimming the insensitive tip of an ingrowing horn which, if left untreated, could cause pain or distress.

The *Welfare of Livestock (Prohibited Operations) Regulations 1982* (S.I. 1982 No. 1884), as amended by the *Welfare of Livestock (Prohibited Operations) (Amendment) Regulations 1987* (S.I. 1987 No. 114) prohibit penis amputation and other penile operations, tooth grinding, freeze dagging and short-tail docking of sheep unless sufficient tail is retained to cover the vulva in the case of female sheep and the anus in the case of male sheep.

Under the *Protection of Animals (Anaesthetics) Act 1954*, as amended, it is an offence to castrate lambs which have reached three months of age without the use of an anaesthetic. Furthermore, the use of a rubber ring, or other device, to restrict the flow of blood to the scrotum or tail, is only permitted without an anaesthetic if the device is applied during the first week of life.

Under the *Veterinary Surgeons Act 1966*, as amended, only a veterinary surgeon may castrate a lamb which has reached the age of three months.

Under the English *Code of Recommendations for the Welfare of Livestock – Sheep* 14th August 2000 Recommendation 63, tail docking must be carried out only in strict accordance with the law. The tail docking procedure should be performed by a competent, trained operator.

1.2.3.6 Relevant industry guidelines and initiatives

Animal welfare is now recognised as a characteristic of product quality and in some instances is now a requirement for certain markets and by some retailers. There is increasing recognition by livestock industries that animal welfare is an integral part of good animal husbandry. Several livestock industries have made significant progress in developing their own quality assurance programs that incorporate animal welfare requirements. These industries generally see such quality assurance programs as a mechanism to demonstrate compliance with legislation, codes of practice, standards or market requirements.

WoolProducers Australia dedicates a considerable amount of time and resources into health and welfare priorities. This includes emergency animal disease preparedness, long-haul transport of livestock, diseases that cause production and/or welfare issues, mulesing and housed sheep. Biosecurity is increasingly important to keep pests and diseases away from sheep and sheep markets. These pests and diseases can be ruinous for livestock productivity, farm income, land value, animal welfare and export markets.³⁰

In 2004 the wool industry agreed that mulesing would be phased out by the end of 2010. Although this is still the long-term goal, there is no longer a fixed deadline. Australian Wool Innovation (AWI) and the Australian Government through matching funding have spent millions of dollars

²⁹ <http://www.legislation.gov.uk/uksi/2007/1100/schedule/1/made>

³⁰ <http://www.woolproducers.com.au/farm-biosecurity/> Viewed 5 August 2012

researching alternative methods of breech flystrike prevention, which include: breeding of resistant sheep, anti-flystrike clips, intradermal injections and blow fly control.

From 1 July 2008 all wool being sold through the auction system has had the option of having an accompanying National Wool Declaration (NWD). This document includes information on chemical use, dark fibre risk and mulesing status. The NWD was developed as part of the AWEX Industry Services Advisory Committee (ISAC), which advises on such aspects of the auction system. ISAC has a wide input from key wool pipeline stakeholders including growers, brokers, exporters and processors. The declaration asks growers to indicate whether they have ceased mulesing or if individual mobs (or even the entire clip) have not been mulesed. It also allows growers to declare if they used a pain relief treatment during the procedure.

In May 2008, the Australian wool industry introduced a voluntary *Code of Practice for the Welfare of Sheep Housed for Wool Production* that aims to:

- Specify the minimum standards of management and husbandry required to maintain the welfare of sheep housed for wool production;
- Provide industry guidelines for livestock producers and handlers, beyond the minimum standards, to assist them to minimise threats and risks to the welfare of sheep housed for wool; and
- Inform all those responsible for the care and management of sheep housed for wool production about their obligations.³¹

Sheepmeat Council of Australia (SCA), like WoolProducers Australia dedicates a considerable amount of time and resources into health and welfare priorities. Importantly, the Council is responsible under the *Australian Meat and Livestock Industries Act 1997* for advising the Minister on expenditure of producer levy monies. The Council has devoted much time and effort on emergency animal disease preparedness, diseases that cause production and/or welfare issues, and welfare issues in the live sheep export trade.

Through the Sheepmeat Industry Strategic Plan (SISP) SCA strives to ensure commitment of all sectors of the Sheepmeat industry to achieving sustainable improvements to livestock welfare. Research and development programs are undertaken to improve animal management, nutrition, health and welfare outcomes - while being practical and effective for Sheepmeat producers. Biosecurity is also a key priority for the industry as pests and diseases can be ruinous for livestock productivity, farm income, land value, animal welfare and export markets.

Meat and Livestock Australia (MLA) delivers marketing and research and development services for Australia's cattle, sheep and goat producers. MLA states that

“the welfare of sheep, cattle and goats affects the productivity, profitability and sustainability of the Australian livestock industries. The welfare of livestock is important during all stages of production, from birth to slaughter. Good animal welfare practices are an integral part of a property management plan. MLA is committed to investing in animal welfare research that provides tools and knowledge to producers to help them improve the wellbeing of their livestock and address issues of community concern.”

MLA asks its producers to consider ‘The Five Freedoms for animals’ and the need to incorporate these into property management plans and procedures:

³¹ WoolProducers Australia et al, 2008

- Freedom from hunger and thirst
- Freedom from discomfort
- Freedom from pain, injury and disease
- Freedom to express normal behaviour
- Freedom from fear and distress.³²

Both the wool and sheepmeat industries have been closely involved in the development of the proposed national standards.

1.3 Consultation processes

The Consultation Guidelines (Appendix F of the COAG Guidelines) have been considered in the consultation strategy for this RIS.

Extensive consultation has taken place with government agencies, researchers, industry and animal welfare organisations in the development of the proposed standards. The preparation of an RIS provides for an informed process of consultation regarding the proposed standards, alternative options and the costs and benefits associated with each option. The publication of the Consultation RIS is the final step in the consultation process, where the general community and consumers, as well as interested stakeholders have an opportunity to comment on both the proposed standards and the RIS.

The standards were developed under the auspices of the former Animal Welfare Committee (AWC), which is ultimately responsible to SCoPI. Membership of AWC at that stage comprised representatives from each of the State and Territory departments with responsibility for animal welfare, CSIRO, and the Commonwealth Department of Agriculture, Fisheries and Forestry - Australia. This Committee has since been reorganised with membership from governments only.

The standards development process was managed by Animal Health Australia (AHA) under a business plan available at: <http://www.animalwelfarestandards.net.au/>. This business plan employs an operational structure consisting of a core writing group and a larger reference group. The writing group undertakes the bulk of the development process and consists of:

- An Independent Chair
- The AHA Livestock Welfare Manager and Project Officer
- An Australian Government representative
- An Animal Welfare Committee government representative
- Industry members as relevant
- Relevant independent science representation
- Invited consultants.

The Writing Group is supported by a widely representative Standards Reference Group (SRG). The SRG includes the writing group and national interest organisations such as the RSPCA Australia, Animals Australia, the Australian Veterinary Association and representatives of the eight state and territory governments. Further drafts of the standards were developed by AHA in consultation with the writing and reference groups as per the business plan.

In addition to the relevant Federal, state and territory government departments, stakeholder

³² <<http://www.mla.com.au/About-the-red-meat-industry/Animal-welfare>> Viewed 5 August 2012.

organisations represented on the SRG include (in alphabetical order):

- **Animals Australia** (AA) is a federation representing some 40 member societies and thousands of individual supporters throughout Australia.³³
- **Australian Livestock Exporters Council** (ALEC) is the national policy body representing the livestock export industry. ALEC is made up of livestock exporters and state chapters whose members are directly involved in the export of cattle, sheep and goats.³⁴
- **Australian Livestock Markets Association** (ALMA) On 8 July 2010 Saleyard Operators Australia joined with Saleyards Association Queensland and operators in South Australia and Victoria to unite in a national body representing approximately 100 saleyards.³⁵
- **Australian Livestock & Property Agents Association** (ALPA) is the national peak industry body representing livestock and property agents. The Association represents more than 1,200 agency businesses across Australia.³⁶
- **Australian Livestock and Rural Transporters Association** (ALRTA) represents road transport companies across rural Australia. The great majority are livestock carriers. ALRTA is the national industry body and is made up of State-level associations from every State of Australia.³⁷
- **Australian Meat Industry Council** (AMIC) is the peak council that represents retailers, processors, exporters and smallgoods manufacturers in the post-farm-gate meat industry.³⁸
- **Australian Wool Exchange** (AWEX) is a public company limited by guarantee to manage and administer wool marketing arrangements in the Australian wool industry.³⁹
- **Australian Wool Innovation Limited** (AWI) is a not-for-profit company that invests in research, development and marketing for the Australian wool industry.⁴⁰
- **Australian Veterinary Association** (AVA) is the professional organisation for veterinarians. The core objective of the AVA is to advance veterinary science.⁴¹
- **Meat and Livestock Australia** (MLA) is a producer-owned company that provides services to livestock producers, processors, exporters, foodservice operators and retailers. MLA has over 43,000 livestock producer ‘members’ who have stakeholder entitlements in the company.⁴²
- **National Farmers' Federation** (NFF) is the peak national body representing farmers and, more broadly, agriculture across Australia.⁴³
- **RSPCA Australia** is the federal body of the eight autonomous state and territory RSPCAs in Australia. RSPCA Australia establishes national policies and positions on animal

³³ < <http://www.animalsaustralia.org/about/> >

³⁴ < <http://www.livecorp.com.au> >

³⁵ < <http://www.saleyards.info/public/about.cfm> >

³⁶ < <http://www.alpa.net.au/> >

³⁷ < <http://alrta.org.au/about/> >

³⁸ < <http://www.amic.org.au/> >

³⁹ < <http://www.awex.com.au/about-awex.html> >

⁴⁰ < <http://www.wool.com/index.html> >

⁴¹ < <http://www.ava.com.au/> >

⁴² < <http://www.mla.com.au/HeaderAndFooter/AboutMLA/Default.htm> >

⁴³ < <http://www.nff.org.au/aboutus.html> >

welfare, and liaises with government and industry on national animal welfare issues. RSPCA Australia policy statements regarding sheep are published on its national web site.⁴⁴

- **Sheepmeat Council of Australia (SCA)** is the nation's peak body representing and promoting the national and international interests of lamb and sheepmeat producers in Australia.⁴⁵
- **Wool Producers Australia (WPA)** is the nation's peak body representing and promoting the national and international interests of all wool producers in Australia.⁴⁶

Key development process components include public consultation⁴⁷ and the conduct of a regulation impact analysis⁴⁸. Key development process values include a commitment to consultation and consensus decision-making, transparency and accountability. The final proposed Standard and Guidelines (S&G) documents will be submitted for endorsement as policy by the jurisdictional Ministers responsible for livestock welfare, primarily the Standing Council for Primary Industries (SCoPI).

The participation of Australian Government, state and territory governments, industry and community stakeholders in the standards setting process provides robust policy outcomes. Whilst the final endorsement is by SCoPI, the relevant industry is able to collaborate in policy development in a meaningful way that contributes to more effective and feasible outcomes.

There will be a 60-day public consultation period conducted via:

<http://www.animalwelfarestandards.net.au/>

plus specific approaches to key stakeholders. National industry bodies and state/territory jurisdictions (SRG members) are committed to consult with representational state/territory-based stakeholders about the development, implementation and enforcement of animal welfare S&Gs. To complement jurisdiction-level communications, it is proposed that Animal Health Australia (AHA) circulate the standards and guidelines consultation draft to state/territory Ministers, CEOs, State Farming Organisations and State AWACs for the public consultation period.

After public consultation, the SRG will make any adjustments to the standards by consensus. . The revised standards will then be submitted for endorsement by the Standing Council on Primary Industries. The final RIS will address the responses to submissions made during public consultation. There is likely to be a further implementation committee process for the standards to deal with compliance and enforcement issues that are most effectively addressed collaboratively between government, industry and welfare organisations once the regulations have been made.

⁴⁴ < <http://www.rspca.org.au/policy/f.asp> >

⁴⁵ < <http://www.sheepmeatcouncil.com.au> >

⁴⁶ < <http://www.woolproducers.com.au/> >

⁴⁷ Conducted through; <http://www.animalwelfarestandards.net.au/>

⁴⁸ As required by the Office of best Practice Regulation; <http://www.finance.gov.au/obpr/about/index.html>

2.0 The problems and policy objective

2.1 Identifying the problems

According to COAG guidelines, the RIS is required to demonstrate the need for the proposed national standards. This is best achieved by identifying the problems that the proposed national standards aim to address.

2.1.1 Introduction

Farming of animals and animal husbandry can pose risks to animal welfare. However, before discussing such risks in detail, it should be noted that risk assessment has two dimensions – the likelihood of an adverse event occurring; and the severity of the consequences if it does occur, as illustrated in Figure 2.

Figure 2 - Assessing the level of risk

Likelihood	High	Medium risk	High risk	High risk
	Mod	Low risk	Medium risk	High risk
	Low	Low risk	Low risk	Medium risk
		Low	Moderate	High
		Consequence		

Source: Victorian Competition and Efficiency Commission

The proposed national standards are not starting from a zero base. They are not introducing national standards for the first time – they are replacing inadequate existing standards (refer to Part 1.2.3.3 of this RIS). The risks associated with sheep farming are all currently being managed by the various state and territory governments in co-operation with the industry. They all have relevant Acts and Regulations in place dealing with the welfare of animals including sheep; and all jurisdictions already have standards or codes of practice dealing with many of the matters covered in the proposed national standards. As listed in Appendix 4 to this RIS, all jurisdictions except VIC, WA and TAS have adopted the existing MCOP (a set of national standards and guidelines). The latter jurisdictions have their own codes of practice based on the existing MCOP. The existing MCOP and the state codes are a confusing and inconsistent mixture of standards and guidelines, as discussed in Part 2.1.2 of this RIS.

It is important to note that the existing MCOP is not sunseting - it will remain in place as part of the base case if the problems outlined below are not addressed. It is therefore not possible to discuss the problems being addressed in this RIS without reference to the inadequacies of the existing MCOP.

The problems underlying the development of the proposed national standards can be summarised as:

- *Risks to the welfare of sheep* due to deficiencies in the existing MCOP for the welfare of sheep; and to a lesser extent

- *Uncertainty for industry* due to a lack of clear and verifiable standards; and
- *Excess regulatory burden* arising from a lack of national consistency and unnecessary standards.

The primary problem being addressed by the proposed standards and alternative options is overall risks to animal welfare. Regulatory differences between the jurisdictions and excess regulatory burden, whilst relevant, are a secondary problem in this RIS. It is important to note that sheep and *not* businesses are affected by the primary problem of poor animal welfare. Therefore, any benefits to be derived from solving risks to animal welfare would be received by the animals themselves and not their owners.

On the other hand, secondary problems based on regulatory differences between jurisdictions do affect businesses in the form of excess regulatory burden; however the number of businesses affected is currently unknown. The public consultation questions below are being used to gather information about the number of businesses that are facing excess regulatory burden because of operating under different codes across multiple jurisdictions.

Whilst the number of sheep affected by risks to animal welfare from various practices may seem as an obvious measure – such a measure fails to take into consideration a) whether or not a practice is ongoing and b) the impact of the procedure or practice. That is to say, simply providing for the number of animals affected does not provide any information regarding the duration of the effect nor the impact of the effect on the animal. For example, mulesing, castration and tail docking are more serious welfare issues than tethering or single penning, although the latter two practices occur over the lifetime of the sheep, as opposed to just a one-off occurrence. Therefore, the combination of factors that determine the *severity of the consequence* include:

- Number of animals affected (small or large);
- Duration of practice (one-off or ongoing); and
- Impact of animal husbandry procedure (primarily invasive or less-invasive).

Notwithstanding this caveat, the number of sheep affected by each practice or procedure is discussed *only* where there is certainty or where there are robust assumptions based on experience in the industry. There is in many cases a large degree of uncertainty surrounding the number of sheep affected, due to lack of data. In these cases, the number of sheep affected is not provided in this consultation RIS but this will be addressed in the Decision RIS using data gathered from this consultation process sought via consultation questions at appropriate points in the following text and Appendix 2.

2.1.2 Risks to the welfare of sheep

As discussed in Part 1.2.2 of this RIS, animal welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress.⁴⁹ There is increasing evidence that animals kept in conditions where their welfare is poor can have weakened immune systems and are more likely to succumb to diseases.⁵⁰

It is important to note that poor animal welfare includes, but is not restricted to, practices that could attract a prosecution under the cruelty provisions of existing animal welfare legislation.

⁴⁹ Article 7.1.1

World Organisation for Animal Health 2010, [Terrestrial animal health code](#). Viewed 10 June 2012

⁵⁰ Dawkins, M.S., 2012

Poor animal welfare outcomes can be linked to both market failure and regulatory failure.

Market failure

There are three key sources of market failure relevant to this RIS:

- *Public good* nature of animal welfare risk management itself;
- *Negative externalities* (poor welfare outcomes) of sheep farming; and
- *Information failure* by end users (consumers) of sheep meat and wool.

With respect to public goods, any beneficial outcome associated with better risk management practices on behalf of the farmer are non-excludable and non-rivalrous amongst the community and therefore some farmers may under invest in such management practices. Many farmers are motivated by animal welfare considerations as well as financial returns. However, if a farmer was to voluntarily invest in say; higher levels of pain relief, better infrastructure and general animal health management, this would not be reflected in the meat or wool product or its price.

With respect to negative externalities of sheep farming, the costs of poor animal welfare are not always be incurred by sheep farmers when making production decisions. Market forces on their own may provide some solution by way of threat to revenues in the case that poor welfare outcomes (malnutrition, dehydration) directly affect the quality or quantity of meat, hide or wool in sheep. However, such market solutions would not be sufficient where there is no identifiable link between risks to animal welfare and product quality/quantity. For example, performing invasive animal husbandry procedures can result in negative externalities by way of poor animal welfare; however such procedures do not affect meat/wool quantity or quality at the point of sale. Therefore such costs fail to be 'internalised' in sheep farmers' production decisions.

Finally, there is also a lack of information in the market place, as consumers of wool and sheep meat are not aware of the welfare status of the sheep used to produce the products they are buying. The main reason for this is a lack of any significant schemes available for sheep producers that offer assurance of welfare credentials. However, even if such consumer information was available, the market share for other animal welfare-related products indicates that only a small percentage of consumers would be likely to be influenced in their purchasing decisions. Market assurance schemes would therefore be of limited benefit in coping with the animal welfare problems discussed in the RIS.

Regulatory failure

Although a second edition was published in 2006 with additional material on mulesing, the existing MCOP relating to the welfare of sheep was originally published in 1991. It is in need of further updating in the light of new knowledge and experience. Regulatory failure in the form of several deficiencies have been identified in the existing MCOP, including the lack of standards dealing with the following welfare issues where there are either guidelines only, or, there are no mandatory statements in the MCOP for:

- The provision of adequate food and water;
- Risk management (including weather extremes, predation, inspections and care of sick or injured animals);
- Facilities and equipment;
- Handling and husbandry (including; tail length, the use of electric prodders, dogs, teeth grinding, pizzle dropping and the exercise of tethered sheep);
- Knowledge and skills for mulesing, tail docking and castration;
- Breeding management;

- Intensive sheep production systems; and
- Humane killing.

Moreover, the original MCOPs did not incorporate an official system for developing or reviewing a code, which resulted in substantial variation in the quality, consultation, timeliness and content of the codes. In addition the review of codes did not comprehensively consider contemporary animal welfare science as a basis for a standard or include a regulatory impact analysis. The development and review process was unfunded and relied on the in-kind contributions of representatives of government and other stakeholders.

Under the AAWS, there is a national recognition of and commitment to the need to review and update the existing codes in line with contemporary science and community views. The development of Australian animal welfare standards represents a commitment to simultaneous refreshment of the legislation that will achieve greater effect and harmonisation than if done unilaterally and over time. This is a significant issue for the sheep industry as higher welfare standards such as mandating lower ages for pain relief for castration or tail docking or banning mulesing could have a profound effect on farm viability as a result of management changes required to address the new standards or associated welfare risks.

The existing MCOP and some of the current state and territory codes of practice are a confusing mixture of both standards ('must' requirements) and guidelines ('should' advisory statements). As such, these codes are not sufficiently clear or verifiable for implementation and enforcement purposes.

For example, Clause 8.2 of the existing MCOP reads as follows:

There are times when sheep need to be handled for close inspection or shifted to another place. *It is essential* that the catcher handle the sheep gently to reduce stress to individual sheep and to other sheep nearby [*emphasis added*].

If drafting facilities are not available, *sheep may be caught, but not pulled, by one leg*. If carrying is necessary, they *should not* be lifted by the wool [*emphasis added*].

Clause 9.3 of the existing MCOP reads as follows:

Tail docking is a *recommended practice* for blowfly control. It *should* be performed on lambs as early as management practices will allow, preferably before 12 weeks. Animals older than six months *require* an anaesthetic [*emphasis added*].

Clause 9.4 of the existing MCOP reads as follows:

Where castration is required it *should* be performed on lambs as early as management practices will allow, preferably before 12 weeks. Animals older than six months *require* an anaesthetic [*emphasis added*].

The above wording is open to two different interpretations: the first is that the entire paragraph is intended as a guideline; and the second is that anaesthesia for animals older than six months is intended to be mandatory. In its own code of practice (based on the existing MCOP) Victoria has adopted the second interpretation. For the purposes of this RIS, the second interpretation has been followed, although it is not entirely clear that the courts would take a similar view.

Similarly, Appendix 3, Clause 3 B of the existing MCOP reads as follows:

The *recommended* age of mulesing is 2 to 12 weeks and; mulesing over 6 months *must* be done with anaesthesia. and; sheep *must not* be mulesed after 12 months of age [*emphasis added*].

Such lack of clear and verifiable standards would make their integration into industry programs such as training and quality assurance (QA) much more difficult creating another restriction on adequately managing animal welfare risks.

This regulatory base case issue is further complicated by differences between jurisdictions regarding ‘acts of veterinary science’ in relation to issues such as the provision of pain relief for surgical husbandry such as castration. In some jurisdictions (NT, WA, Tas), livestock owners are not permitted to perform these age-of-sheep related veterinary procedures under any circumstances. There are clearly stated ‘acts of veterinary science’ based on an age limit with no exemptions for livestock owners. In some jurisdictions (SA, NSW, Qld) there are exemptions for an owner to perform these ‘acts of veterinary science’ as long as it is not for fee or reward. In other jurisdictions (Vic) the matter is not covered under legislation covering veterinary surgeons and their work.

The regulatory base case issue is further complicated by differences between jurisdictions’ prevention of cruelty to animals acts (POCTA) which often are mostly general in their description of offences. In relation to pain relief for sheep, NSW is an exception with a defence to a cruelty charge if an age limit of 6 months for castration and tail docking and 12 months for mulesing is followed (Section 24 - certain defences).

Public consultation question 1: In your experience, to what extent does the existing MCOP and related regulations create uncertainty for industry? Does such uncertainty vary between different states and territories?

In summary, both market and regulatory failure can create significant risks to the welfare of sheep. The main areas of direct concern to incremental risks in sheep welfare are in relation to painful husbandry procedures. The mulesing procedure and associated welfare impacts are of most concern in this RIS; however other painful husbandry procedures discussed include: tail docking, castration and laparoscopic artificial insemination (LAI). These procedures involve surgical cutting, constriction rings or application of heat to destroy tissue. In general, the impact on the animal and level of perceived pain increases with the animal’s size and age. Scientific advice needs to be taken into account in the setting of national standards and/or guidelines. There is a need to agree on acceptable age limits before pain relief is applied. Other areas of welfare concern (including those that relate to cruelty) are: tethering, dog bites, inadequately cleaned sheds, excessive wool length, teeth grinding and trimming, inappropriate use of electric prodders and pizzle dropping.

Mulesing

Mulesing is the removal of wrinkled skin from the breech or breech and tail of a sheep using mulesing shears. Until accepted alternatives are developed and the current practice can be phased out, mulesing of lambs remains an important husbandry practice in Australia for animal health, welfare and management reasons. The principal reason is to reduce urine and faecal soiling or dag formation in the breech and tail wool and thus minimise susceptibility to breech and tail flystrike. Flystrike is one of the most important health and welfare concerns for sheep in Australia and sheep industries are committed to controlling flystrike to ethically acceptable levels.

Currently, cost effective chemical, management and breeding solutions are not available for all types of production systems in Australia and mulesing is a valuable tool for the prevention of breech flystrike for certain production environments and sheep types.

However, mulesing is a very painful procedure and involves a greater degree of tissue trauma than other surgical husbandry procedures such as castration or tail-docking. One of the first papers published was by Paull et al 2007 and examined the behavioural and physiological stress responses of lamb’s mulesed with no additional treatment.⁵¹ Lambs mulesed with no drug application exhibited large increases in the stress-responsive hormone cortisol, reduced lying and increased standing with a hunched back compared with unmulesed lambs.

⁵¹ Paull DR, Lee C, Colditz IG, Atkinson SJ and Fisher AD. The effect of a topical anaesthetic formulation, systemic flunixin and carprofen, singly or in combination, on cortisol and behavioural responses of Merino lambs to mulesing. *Aust Vet J* 2007.85: 98-106.

Currently pain relief products that could be used in conjunction with mulesing are only available through a veterinarian. The most widely used product is Tri-Solfen, which is an S4 drug available only under prescription from veterinarians.⁵² There are no non-steroidal anti-inflammatory drugs (NSAID) that are currently registered for sheep in Australia.

Available scientific research suggests that it is possible to achieve pain relief in conjunction with mulesing. Pain relief would be most effectively achieved through a combination of approaches such as the pre-mulesing administration of systemic, off-label pain relief followed by a post-mulesing application of topical anaesthetic to deal with the ensuing period of pain associated with the inflammatory phase. That is to say a combination of short and⁵³ long-acting pain relief drugs may be needed to provide more complete pain relief.

Under the base case, there are an estimated 4.86 million lambs per annum that are currently mulesed without pain relief. Table 1 illustrates that this problem is largest particularly for Merino lambs in NSW and WA.

Table 1 – Number of lambs by sire type mulesed without pain relief per annum – by state and territory⁵⁴

Jurisdiction	No. Merino lambs mulesed without pain relief	No. 'other' lambs mulesed without pain relief	Total number of lambs mulesed without pain relief
NSW	952,818	332,584	1,285,402
VIC	386,716	199,301	586,017
QLD	236,964	101,656	338,620
SA	470,541	463,734	934,275
WA	1,385,048	152,261	1,537,309
TAS	119,651	58,712	178,363
AUSTRALIA	3,551,738	1,308,246	4,859,985

Appendix 3 of the existing MCOP for sheep requires anaesthesia for the mulesing of sheep over 6 months of age, and no mulesing over 12 months of age. As with other similar husbandry procedures, upper age limits are appropriate for mulesing in order to optimise sheep welfare. It is reasoned that the age limit after which mulesing requires the use of pain relief is consistent with the standards for castration and tail docking. When mulesing is done it is common practice to do this at the lamb marking stage to avoid extra mustering and handling. Research has shown that younger animals recover more quickly than older animals from this and other invasive procedures such as tail docking and castration. Therefore, six months is proposed as a suitable age limit in Australia to accommodate all production systems. The same situation exists for castration and tail docking. There are currently an estimated 30,000 lambs mulesed over the age of 6 months, as shown in Table 2, again with the greatest amount taken to be in NSW, VIC, SA and WA.

Public consultation question 2: Do you know the number or percentage of farm hands needing training for mulesing under the proposed standard S7.1? Do you have any information to improve the estimation of costs in relation to mulesing?

Table 2 – Number of lambs mulesed per annum above the age of 6 months – by state and territory⁵⁵

⁵² This drug is currently being considered for rescheduling to S6, which result in less restricted supply.

⁵³ Paull DR, Colditz IG, Lee C, Atkinson SJ and Fisher AD. Effectiveness of non-steroidal anti-inflammatory drugs and epidural anaesthesia in reducing the pain and stress responses to a surgical husbandry procedure (mulesing) in sheep (2008).

⁵⁴ See Table A3.2 of Appendix 3 for source of estimates

⁵⁵ See Table A3.8 of Appendix 3 for source of estimates

Jurisdiction	No. lambs mulesed over 6 months of age
NSW	9,143
VIC	4,801
QLD	809
SA	6,199
WA	8,419
TAS	629
AUSTRALIA	30,000

Lack of skills for lamb marking

Tail docking and castration are usually performed together, during a husbandry process called ‘lamb marking’ that often includes earmarking and other husbandry procedures. Insufficient skill/supervision by those performing the tail docking and castration procedures (discussed in next sections) can lead to adverse welfare outcomes. This problem is regarded as highly important by the sheep industry. An unskilled/unsupervised farm hand undertaking tail docking would fail to adequately meet the following key animal welfare considerations:

- Reducing the impact of mustering, handling and restraint
- Carrying out the procedures at the earliest practical age
- Knowledge of the appropriate age/size considerations for selection of method
- Ensuring that facilities and equipment are suitable
- Applying the method skilfully
- Applying other basic principles such as vaccinating ewes and lambs to protect against tetanus and other clostridial diseases
- Avoiding wet weather
- Maintaining clean hygienic practices
- Allowing the unweaned lambs to mother up as soon as possible
- Releasing the sheep from the yards and onto feed and water as soon as possible
- Conducting regular post-docking inspections.

According to Table 3 there are an estimated 701 unskilled farmhands likely to be involved in tail docking and castrating procedures with the majority located in NSW, VIC, SA and WA. It is expected that in most cases they will be involved in these procedures under the guidance of an experienced operator and hence will already be gaining the skills and experience required.

Table 3 – Number of unskilled/unsupervised farmhands performing tail docking and castration – by state and territory⁵⁶

Jurisdiction	No. Farmhands requiring skills and/or supervision
NSW	262
VIC	175
QLD	29
SA	109
WA	99
TAS	25

⁵⁶ See Table A2.5 of Appendix 2 for source of estimates

Jurisdiction	No. Farmhands requiring skills and/or supervision
NT	0
ACT	1
Australia	701

The number of lambs that are affected by adverse welfare outcomes due to unskilled and unsupervised farmhands undertaking tail-docking procedures is unknown.

Public consultation question 3: Do you know the number or percentage of lambs that are affected by adverse welfare outcomes due to unskilled/unsupervised farmhands undertaking tail-docking and castration procedures? Do you have any other information to improve the estimation of costs under the proposed standard S6.1?

Operator proficiency is a significant concern to industry and the training and supervision required by the new standards is already largely provided. The implementation of a new regulatory framework may not result in any noticeable improvement of welfare for sheep.

Castration

Castration remains an important procedure for sheep husbandry and on-farm management of male sheep in Australia. The reasons for castration include:

- Reduced aggression and sexual activity;
- Easier and safer to handle and manage;
- Less likely to fight, reducing bruising and injuries to themselves and other sheep;
- Easier to keep in paddocks after the time that sexual maturity would be reached;
- Allows for management flexibility to finish lambs to meet market specifications under variable seasonal conditions;
- Allows other husbandry practices (e.g. shearing) to be undertaken more quickly, efficiently and safely;
- Prevention of unwanted mating and pregnancies, particularly with the risk of dystocia in maiden ewes;
- Wethers grow a finer wool quality than rams;
- Ease and efficiency of processing (significant increase in the cost to producer for the processing of entire males); and
- Improved meat quality in sheep.

The most common methods of castration of lambs in Australia are by:

- Rubber rings; and
- Cutting (with a lamb-marking knife) the scrotum and manual removal of testes.

The problems under the base case involving castration of male lambs relate to insufficient skills/supervision of farmhands performing this procedure – leading to adverse outcomes. As with tail docking, key considerations relating to animal welfare would fail to be adequately met in the instances where those undertaking castration procedures were unskilled and unsupervised. The

number of farmhands requiring skills and/or supervision by jurisdiction for castration is identical to tail docking and is summarised in Table 3.

The total annual number of male lambs that are castrated in Australia by jurisdiction are estimated in Table 4 below. The number of male lambs⁵⁷ that are affected by adverse welfare outcomes due to unskilled/unsupervised farmhands undertaking castration procedures is currently unknown. As with tail docking, operator proficiency is a significant concern to industry and training and supervision required is already largely provided. The implementation of a new regulatory framework may not result in any noticeable improvement of welfare for sheep.

Table 4 – Number of male lambs castrated per annum – by state and territory⁵⁸

Jurisdiction	Lamb numbers
NSW	6,104,213
VIC	3,553,978
QLD	598,251
SA	2,555,737
WA	3,273,000
TAS	548,855
NT	-
ACT	10,599
AUSTRALIA	16,644,632

Public consultation question 4: Do you know of the number or percentage of sheep not receiving pain relief for castration? Do you have any other information to improve the estimation of costs under the proposed standard S6.4?

Tail docking

Tail docking of lambs is widely practised in Australia for hygiene reasons and minimisation of external parasites such as fly larvae. Webb Ware et al 2000 reported that leaving the tail on lambs can result in a 3 fold increase in flystrike rates in Australia. The Australian blowfly is extremely aggressive and can lay hundreds of eggs on sheep. Where they are laid in moist areas with faeces and urine - the hatched larvae use enzymes to dig into the tissue of the sheep causing inflammation and pain.⁵⁹ Under Australian conditions, leaving a tail longer than three free palpable joints can have adverse health and welfare outcomes for the sheep as these sheep are reported to be difficult to shear and crutch, can heal abnormally, and are more susceptible to staining, dag and flystrike (Munro and Evans 2009).

The most common methods of tail docking lambs include:

- Gas-heated hot knife;
- Applying rubber rings; and
- Cutting with a sharp knife.

According to Hayward (2002) lambs should be tail docked by the hot knife method or the rubber ring method in preference to the sharp knife method.

⁵⁷ Breeding rams are of course not castrated but their numbers are so small as to be negligible.

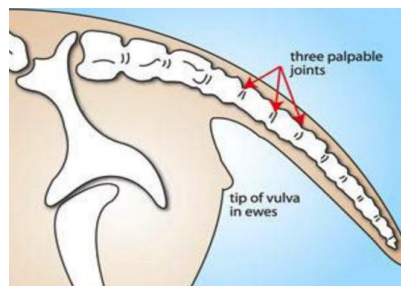
⁵⁸ See Table A2.1 of Appendix 2 for source of estimates x 50% to reflect male lambs only

⁵⁹ <http://www.weeklytimesnow.com.au/article/2011/11/01/402255_on-farm.html>

Conversely, the practice of removing the entire tail is not acceptable as it results in adverse health and welfare implications and is unnecessary. The welfare problems are created when no tail stump is left, or less commonly when the tail stump is too long. The absence of an effective tail stump prevents the sheep from being able to channel urine and faeces away from the breech area. It also increases the risk of cancers from exposure of soft tissue to the sun.⁶⁰ It is well documented that short docking (i.e. leaving zero palpable joints) leads to health and welfare issues for sheep such as rectal prolapse (Thomas et al 2003) and squamous-cell carcinoma of the vulva.

The generally regarded optimum length of a tail is to leave three palpable joints, however, there is little evidence of difference between a docked tail length of one, two or three palpable free joints in terms of animal welfare. An illustration of sheep's palpable tail joints is provided in Figure 3.

Figure 3 – Illustration of palpable joints in a sheep's tail⁶¹



The problems under the base case relating to tail docking and sheep welfare include:

- A high proportion of lambs having tails docked too short to prevent soiling of the breech wool and flystrike (see Larsen and deFegeley 2004); and, to a small extent, sheep involved in competitions of live animals in shows⁶². The total annual number of lambs that are tail docked in Australia by jurisdiction is estimated in Table 3. Anecdotal advice from industry is that short tails are quite common in sale yards; however, the percentage of lambs that have too short a tail is currently unknown.

Public consultation question 5: Do you know the number or percentage of sheep that have a tail that is less than two palpable joints long? Do you have any other information to improve the estimation of costs under the proposed standard S6.3?

Table 3 – Number of lambs tail docked per annum – by state and territory⁶³

Jurisdiction	Lamb numbers
NSW	12,208,426
VIC	7,107,956
QLD	1,196,502
SA	5,111,474
WA	6,546,000
TAS	1,097,709
NT	-
ACT	21,197

⁶⁰ <<http://www.flyboss.org.au/management/tail-length.php>>

⁶¹ Ibid

⁶² Provides the illusion that the lambs are more muscular

⁶³ See Table A2.1 of Appendix 2 for source of estimates

- The practical difficulty in always achieving an exact tail length with the docking procedure and that absolute accuracy may be difficult to achieve in small lambs; and

Further information about mulesing, castration and tail docking can be found in discussion papers available from the website: www.animalwelfarestandards.net.au

Laparoscopic artificial insemination (LAI) for artificial sheep breeding

Laparoscopic artificial insemination (LAI) is an important technique for obtaining genetic gain (i.e. producing genetically improved progeny) to a greater extent than with conventional breeding methods.

LAI involves the direct placement of semen into the uterus. The procedure was developed in 1982 by Australian researchers and it revolutionised the sheep artificial insemination technique with a number of production advantages over per-vaginal insemination. An experienced operator can inseminate up to 450 ewes per day with fresh or frozen semen. Semen for both LAI and Embryo transfer (ET) is collected by artificial vagina or electro-ejaculation and may be fresh or frozen.

ET involves similar methods with the insertion of fertilised embryos using a laparotomy procedure under a general anaesthetic. These embryos are ‘flushed’ from a donor ewe. Due to the practical anaesthetic requirements for embryo collection and placement, this procedure is not discussed further in this RIS.

Careful management and a regime of veterinary drugs are required to synchronise oestrus in all artificial breeding. Both LAI and ET require high standards of asepsis and analgesia and detailed knowledge of anatomy and surgical techniques to ensure that the welfare of the animal is not compromised.

Artificial breeding procedures on a sheep have the potential to cause unreasonable pain, distress or injury. Whilst LAI is a minority breeding method compared to natural breeding practice in paddocks, it requires the use of a laparoscope, and is an invasive and painful procedure used to inject semen directly into the uterus (through the abdomen) in order to provide for reliable conception.

Under the base case there are an estimated 300,000 sheep per annum that undergo the LAI procedure, and it is estimated that 50% of these procedures are performed without pain relief. The number of breeding ewes undergoing the LAI procedure without pain relief is estimated by state and territory in Table 5. The most common practice of LAI without pain relief is estimated to occur in NSW, VIC, SA and WA.

Public consultation question 6: Do you know the number or percentage of ewes that are affected by insufficient pain relief during artificial breeding procedures? Do you have any other information to improve the estimation of costs under the proposed standards S8.1 and S8.2?

Table 5 – Number of ewes per annum undergoing LAI without pain relief – by state and territory⁶⁴

Jurisdiction	No. of breeding ewes affected
NSW	55,302

⁶⁴ See Table A3.14 of Appendix 3 for source of estimates

VIC	30,992
QLD	7,043
SA	21,998
WA	29,893
TAS	4,669
NT	1
ACT	103
Australia	150,000

Permanent Tethering

Tethering is where an animal is confined to a specific area by an anchored chain and is typically used on an individual sheep to allow grazing and access to pasture/feed in unfenced areas. Tethering is regarded as a temporary method of restraint that is not suitable for long-term confinement.⁶⁵ (This problem does not include the short term tethering of sheep in shows for grooming, judging and display). The particular welfare concerns about permanently tethered sheep⁶⁶ are that they may be unable to obtain sufficient exercise and are typically isolated from other sheep (which are herd animals). Both of these issues are likely to result in adverse welfare outcomes for permanently tethered sheep. The probability of both these issues occurring is reasonably high. However the extent of permanent tethering in Australia is not substantial in relation to the overall population of sheep. There are an estimated 1,250 permanently tethered sheep in Australia with the majority (1,000) in NSW as shown in Table 6.

Public consultation question 7: Do you know the number of sheep that are tethered and will be affected under the proposed standard S5.7? Do you have any other information to improve the estimation of costs?

Table 6 – Number of permanently tethered sheep – by state and territory⁶⁷

Jurisdiction	No. of permanently tethered sheep
NSW	1,000
VIC	50
QLD	50
SA	50
WA	50
TAS	50
NT	-
ACT	-
Australia	1,250

Bites from dogs

It is currently estimated that under the base case there are 2,191 sheep farm dogs that are prone to biting and that are non-muzzled, as shown in Table 7.

Table 7 – Number of non-muzzled sheep farm dogs prone to biting – by state and territory⁶⁸

⁶⁵ See Table A2.3 of Appendix 2 for source of estimates.

⁶⁶ Typically, pet sheep and farm house paddock sheep.

⁶⁷ See Table A2.3 of Appendix 2 for source of estimates.

⁶⁸ See Table A2.2 of Appendix 2 for source of estimates

Jurisdiction	No. Non-muzzled sheep dogs
NSW	821
VIC	549
QLD	91
SA	341
WA	311
TAS	78
NT	0
ACT	2
Australia	2191

The number of sheep at risk of dog bites is unknown, however assuming that each dog would be able to herd around 100 sheep - this would bring the total number of sheep potentially subject to pain or injury resulting from a dog bite at some stage - equal to any number of sheep up to 21,910 per annum. However, dogs are often employed as part of best practice mustering activities. It is unlikely to be a significant welfare issue, as where a biting dog is detected swift remedial action is usually undertaken.

Public consultation question8: Do you know the number or percentage of sheep that are affected by adverse welfare outcomes due to dog bites? Do you have any other information to improve the estimation of costs under the proposed standard S5.2?

Welfare problems relating to cruelty

There are some welfare problems that are serious enough to attract an investigation and possible prosecution under the cruelty provisions of the animal welfare legislation that exists in all jurisdictions (see Appendix 4 to this RIS). In such cases, the numbers of animals affected is not essential to demonstrating the existence of a welfare problem, as cruelty prosecutions can (and have been) launched in cases of a single animal. Such cases include the following welfare risks.

Inadequately cleaned sheds

Currently there are a minority number of sheep farmers allowing faeces and urine to accumulate in sheds to a stage that is compromising the welfare of a sheep in an intensive production system. It is estimated that there are an estimated 5 inadequately cleaned sheep sheds affecting approximately only 50 sheep across Australia, as shown in Table 8. The majority of these sheep and sheds are in NSW and VIC (see Table 8).

Table 8 – Number of inadequately cleaned sheds – by state and territory⁶⁹

Jurisdiction	Current no. of inadequately cleaned sheds	Current number of sheep affected
NSW	2	20
VIC	2	20
QLD	-	-
SA	1	10
WA	-	-

⁶⁹ See Table A2.9 of Appendix 2 for source of estimates

Jurisdiction	Current no. of inadequately cleaned sheds	Current number of sheep affected
TAS	-	-
NT	-	-
ACT	-	-
Australia	5	50

Public consultation question 9: Do you know the number or percentage of sheep that are affected by adverse welfare outcomes due to poor hygiene in sheds? Do you have any other information to improve the estimation of costs under the proposed standard S9.4?

Excessive wool length

Excessive wool length (i.e. greater than 250mm) is more likely to become a breeding ground for lice in sheep and lead to infestations. Apart from the obvious concerns of over-heating - other welfare issues include:

- Moisture build-up in long wool and subsequent fleece rot - which can lead to flystrike;
- Moist fleeces making sheep heavier and prone to becoming cast or developing foot abscesses in wet pasture leading to reduced ability to feed and drink;
- Roundworm scouring leading to dag formation around the breech, made worse when sheep have long wool;
- Ewes lambing with long wool may experience difficult births and lambs may struggle to find the teat to feed properly, particularly when suckling for the first time.⁷⁰

The number of sheep that carry wool length greater than 250mm outside shearing periods is currently unknown.

Public consultation question 10: Do you know the number or percentage of sheep, on average, that carry wool length greater than 250mm outside shearing periods? Do you have any other information to improve the estimation of costs under the proposed standard S5.3?

Trimming and grinding of sheep teeth

Tooth grinding (also known as the Caldow method) and tooth trimming involves the use of an angle grinder, fitted with a cutting disc to shorten and straighten the incisors. These procedures are conducted because of the perceived benefits to animal production, however, a number of field trials in a range of locations have failed to demonstrate any benefit to productivity.⁷¹ A large trial by Williams (1993) involving over 40 900 ewes in Victoria and southern New South Wales showed no improvement with respect to productivity.⁷²

Whilst these procedures do not have any beneficial effect on health or productivity of sheep, they do have the potential to cause significant pain.⁷³ The number of sheep that are currently at risk from this procedure is currently unknown.

Public consultation question 11: Do you know the number or percentage of sheep, on

⁷⁰ < <http://www.dpi.nsw.gov.au/archive/agriculture-today-stories/august/shearing-is-an-animal-welfare-necessity> >

⁷¹ < <http://www.ava.com.au/policy/105-sheep-dentistry-including-tooth-trimming> >

⁷² Williams A (1993). Evaluation of tooth grinding as a method for improving economic performance in flocks with premature incisor tooth loss ('broken mouth'). Final Report, Project DAV 5, Wool Research and Development Corporation

⁷³ < <http://www.dpi.vic.gov.au/agriculture/about-agriculture/legislation-regulation/animal-welfare-legislation/codes-of-practice-animal-welfare/accepted-farming-practice-sheep> >

average, that undergo tooth trimming? Do you any other information to improve the estimation of costs under the proposed standard S5.5?

Inappropriate use of electric prodders

Electric prodders are used to handle and manage the movement of sheep in some cases, notwithstanding that there are other alternative handling aids such as flappers, rattlers, or canes with flags. Electric prodders can result in pain and suffering if used inappropriately on sheep. The use of electric prodders on sensitive areas such as the genital, anal, udder, or facial areas of sheep is painful and inappropriate. The use of electric prodders on lambs that are less than three months old or on sheep that are unable to move away is also inappropriate. The extent of inappropriate use of electric prodders and the number of sheep that are affected adversely is unknown.

Public consultation question 12: Do you know the number or percentage of sheep, on average, that are affected by the inappropriate use of electric prodders? Do you have any other information to improve the estimation of costs under the proposed standard S5.4?

Pizzle dropping

Pizzle dropping is a surgical procedure performed on wether lambs and weaners (under 12 months of age). The skin between the prepuce and the abdomen is severed to allow the prepuce to hang below the wool on the belly region.⁷⁴ Pizzle dropping is sometimes performed to reduce pizzle rot (balanoposthitis — inflammation of the prepuce and penis of castrated sheep), wetting of the belly wool by urine and resultant fly strike in the region of the pizzle.⁷⁵ There is no evidence or valid data to support the procedure but rather only anecdotal reports to justify the procedure on a production basis in terms of reduced staining of belly wool.⁷⁶ Moreover, pizzle dropping has been largely abandoned due to lack of efficacy.⁷⁷

However, there are welfare risks associated with the procedure including pain and the risk of surgical damage if the procedure is performed incorrectly.⁷⁸ The number of sheep that are at risk from this procedure is currently unknown.

Public consultation question 13: Do you know the number or percentage of sheep, on average, that are subjected to the pizzle dropping procedure? Do you have any other information to improve the estimation of costs under the proposed standard S5.6?

Other risks to sheep welfare

Other 'risks to welfare of sheep' include any potential factors which could affect the welfare of sheep in a way that causes pain, injury or distress to sheep. The outcome could include; sunburn, hypothermia, heat stress, dehydration, exhaustion, abortion, injury, metabolic disease or death. These risks can be managed by undertaking reasonable actions to prevent or reduce the risk.

Although the number of sheep affected by poor risk management in general is unknown, Table 9 illustrates the estimated number of sheep by state and territory. It is expected that an *unknown*

⁷⁴ < <http://www.ava.com.au/policy/101-pizzle-dropping> >

⁷⁵ < <http://www.dpi.vic.gov.au/agriculture/about-agriculture/legislation-regulation/animal-welfare-legislation/codes-of-practice-animal-welfare/accepted-farming-practice-sheep> >

⁷⁶ < <http://www.ava.com.au/policy/101-pizzle-dropping> >

⁷⁷ Hayward, M, (March 2002), Pain and its Control In Routine Husbandry Procedures In Sheep and Cattle - prepared for ACT Animal Welfare Advisory Committee.

⁷⁸ < <http://www.ava.com.au/policy/101-pizzle-dropping> >

proportion of these sheep would be subject to adverse welfare outcomes from other poor risk management practices.

Public consultation question 14: Are there any poor risk management practices other than those already discussed in this Part of the RIS? Do you know the number or percentage of sheep that are subjected to adverse welfare outcomes from such other poor risk management practices?

Table 9 – Number of sheep in Australia 2011-12 – by state and territory⁷⁹

Jurisdiction	No. of Sheep
NSW	26,824,697
VIC	15,212,015
QLD	3,653,239
SA	11,008,541
WA	13,999,854
TAS	2,344,469
NT	1,855
ACT	54,092
AUSTRALIA	73,098,762

2.1.3 Excess regulatory burden

Excess regulatory burden arises from a lack of national consistency and from unnecessary existing standards.

Lack of national consistency

A project to address the need for consistency in animal welfare arrangements was endorsed by PIMC in 2006 and funded under the AAWS. It followed agreement by livestock industries that inconsistency of welfare requirements and operational arrangements for all industry members under existing jurisdictional laws and enforcement arrangements was the most important impediment to achievement of improved and nationally consistent animal welfare outcomes.

In addition the AAWS Livestock and Production animals Working Group has repeatedly stated that consistency in animal welfare arrangements is the single biggest obstacle to achieving nationally consistent improvements in animal welfare outcomes.

A lack of consistency in regulation of animal welfare arrangements also results in unnecessary regulatory burden for farm businesses that operate in more than one state or territory, and would be subject to different requirements across borders. The extent of sheep farming businesses operating in more than one jurisdiction and the number of sheep that are affected adversely is unknown. In addition a lack of consistency results in impediments to the setup and operation of national quality assurance schemes by industry associations.

Public consultation question 15: Do you know the number or percentage of sheep farming businesses that operate in more than one jurisdiction and how many sheep are likely to be

⁷⁹ See Table A2.1 of appendix 2 for source of estimates

affected? Please provide percentage estimates for various combinations of states and territories.

An example of the effect of inconsistent implementation of animal welfare regulations is provided by the fourth edition of the poultry code. The implementation of the poultry code experienced years of delay after its endorsement by the Ministerial Council in 2002 (although it had been expected that the code would be implemented within around 12 months). Regulations to give effect to the poultry code were only implemented by the end of 2008 in some jurisdictions. In addition the regulation of the code varied substantially between jurisdictions.

As discussed in Part 1.2.2.3 of this RIS, a key objective of the AAWS is ‘to facilitate improved consistency of legislation across states and territories for improved and sustainable animal welfare outcomes.’ The aim is to ensure all animals receive a standard level of care and treatment. Australia’s animal welfare ministers agreed in April 2006 on the need for a nationally consistent approach for the development, implementation and enforcement of animal welfare standards. AAWS 2nd National Australian Animal Welfare Strategy Workshop participants reiterated that having consistent legislation across states and territories was a major objective of the AAWS.

The main jurisdictional differences in animal welfare standards for sheep are the following cases where one or more jurisdictions have explicit standards whereas others have either guidelines or no mention at all:

- Sheep teeth grinding, clipping or trimming are expressly prohibited under VIC and NSW legislation.
- VIC requires castration of rams over 6 months of age to be conducted under veterinary supervision using anaesthesia. There are approximately 1,777⁸⁰ sheep in VIC per annum where castration involves the administration of drugs by veterinary supervision that would otherwise be performed by contractors in other states and territories.

Public consultation question 16: Do you know of other differences in current state or territory welfare standards for sheep; and if so, what are these?

The number of businesses affected by these inconsistencies (i.e. those operating across jurisdictions) and the number of sheep involved is currently unknown; however estimates will be gathered via the consultation questions in Part 2.1.2 of this RIS.

Such inconsistencies have the potential to cause unnecessary regulatory burden as a result of interstate businesses having to comply with different standards. Where those differences are not risk-based, any additional costs represent waste. However, it is unlikely that unfair business competition from an inconsistent operating environment between jurisdictions (i.e. an un-level playing field) is likely to occur due to the very small number of animals involved with respect to teeth grinding and trimming; and castration over 6 months. Such jurisdictional differences are minor compared to the risks to animal welfare resulting from the inadequacies of the existing MCOP.

Some differences in standards are required because of biological or behavioural variations between sheep breeds, climate or other regional differences; but other inconsistencies in standards are not

⁸⁰ Equal to 3,553,978 castrated male lambs with 0.05% castrated over 6 months based on advice from AHA
PROPOSED AUSTRALIAN ANIMAL WELFARE STANDARDS AND GUIDELINES - SHEEP
 Consultation Regulation Impact Statement Edition One, Version 1.0, 1 March 2013 for public consultation

necessary for these reasons. Such differences would be about promoting ‘best practice’ rather than national consistency for consistency’s sake.

Where regional or other critical differences are not apparent, industry-wide standards not only have a positive effect on the economy as a whole, but also provide benefits for individual businesses that use them as strategic market instruments. Standardisation can lead to lower transaction costs in the economy as a whole, as well to savings for individual businesses.⁸¹

Unnecessary existing standards

Excess regulatory burden can also be imposed by unnecessary existing standards. For example, clause 1.C. 3 in Appendix 3 of the existing MCOP requires:

A comprehensive and audited training and accreditation process is available and *mandatory* for anyone who performs the mulesing procedure [*emphasis added*]

Expert advice from industry is that the relevant knowledge, experience and skills for mulesing can be acquired on the job, and the formal training and accreditation is unnecessary. In economic terms, this can be regarded as a form of government failure. As shown in Table 10 there is currently unnecessary regulatory burden being placed on 590 farmhands per annum resulting in an additional transport and course fee cost equal to an estimated \$674 per trainee. The highest regulatory burden is imposed on NSW followed by VIC, SA and WA.

Table 10 – Number farmhands each year currently undergoing formal training and accreditation for mulesing – by state and territory⁸²

Jurisdiction	No. Employees that are currently affected by training and accreditation
NSW	233
VIC	130
QLD	18
SA	98
WA	93
TAS	17
NT	-
ACT	1
Australia	590

2.2 Policy objective

The former Animal Welfare Committee (AWC), which provided expert advice to SCoPI, requested that animal welfare standards be: ‘clear, essential and verifiable.’ To complement these criteria, the four main decision-making principles used for policy analysis in the welfare standards development process are that they are:

- Desirable for animal welfare, and preferably supported by science;
- Feasible for industry and government to implement;
- Important for the animal welfare regulatory framework; and
- Will achieve a valid, intended outcome for animal welfare.⁸³

⁸¹ TU Dresden and Fraunhofer Institute, 2000.

⁸² See Table A2.8 of Appendix 2 for source of estimates

In relation to the proposed standards the following overarching policy objective is identified:

To minimise risks to sheep welfare and to reduce regulatory burden in a way that is practical for implementation and industry compliance.

The main criterion for evaluating the proposed standards and the feasible alternatives is net benefit for the community, in terms of achieving this policy objective. As part of the evaluation, there will be a need to ensure that the benefits of the proposed standards justify their costs, and that they take into account the expectations of the Australian and international communities.

⁸³Animal Health Australia (AHA) (2013). Australian Animal Welfare Standards and Guidelines for Sheep, Public Consultation Version, In Press, Adapted from Linstone and Turoff 2002 The Delphi Method: Techniques and Applications III.B.I The Policy Delphi.

3.0 Alternatives to proposed standards

In accordance with the COAG guidelines, an RIS is required to identify feasible alternatives to the proposed standards. Conversely, an RIS is not required to identify alternatives that are not practicable, or where there are no significant cost burdens being imposed.

Having no standards at all is not a feasible option, because if no action is taken, the existing MCOP for sheep will remain in place.⁸⁴ Some jurisdictions already have their own standards (based on the existing MCOP) as part of the base case; and it is outside the scope of this RIS to consider changes to individual state or territory standards.

Similarly, public education campaigns as an alternative to national standards are likely to be ineffective and therefore not a practicable alternative. Non-compliance with animal welfare standards is usually limited to a very small number of farmers who are unlikely to be more influenced by public education campaigns than by enforceable standards.

As discussed in Part 2.1.2 of this RIS, there is a lack of information in the market place, as consumers of wool and sheepmeat are not aware of the welfare status of the sheep used to produce the products they are buying. However, even if such consumer information were available, the market share for other animal welfare-related products indicates that only a small percentage of consumers would be likely to be influenced in their purchasing decisions. Thus better consumer information is not a practical alternative to welfare standards and guidelines.

At the SRG meetings in 2009 and 2010, alternative positions and views were expressed by governments, industry and animal welfare organisations regarding the need to consider various practicable alternatives, resulting in a provisional list of variations to the proposed standards. This list was prioritised to six variations by the Animal Welfare Committee, on the basis of controversial issues that might provide further improvements in animal welfare, but before the costs of such improvements had been estimated. In arriving at the variations to be examined, the same four main decision-making principles used for policy analysis in the welfare standards development process (refer to Part 2.2. of this RIS) were used to assess the potential suitability of the variations for further analysis. The public consultation seeks the views and advice of interested parties in the further formulation of variations to the existing proposals. Selected additional variations may be investigated and reported in the decision RIS.

The practicable alternatives together with the proposed national standards will from here on be referred to as ‘options’. The options to be assessed in terms of costs and benefits are:

- **Option A:** converting the proposed national standards as currently drafted into national voluntary guidelines (the minimum intervention option);
- **Option B:** the proposed national standards as currently drafted with the intention of them being made mandatory;
- **Option C:** the proposed mandatory national standards as currently drafted with one or more of the following variations:
 - *Variation C1: All mulesing with pain relief*
 - *Variation C2: Restrict mulesing age to less than 6 months of age*
 - *Variation C3: Single penning for wool production ban*

⁸⁴ MCOPs are not subject to sunset provisions.

- *Variation C4: Tethering ban*
- *Variation C5: Mandate pain relief for laparoscopic LAI and ET*
- *Variation C6: Require docked tails to have at least one free palpable joint⁸⁵.*

Information on the meanings and impacts of these options and variations is given in the evaluation of costs and benefits in the next part of this RIS.

⁸⁵ The proposed standards (Option B) require two free palpable joints.

4.0 Evaluation of Costs and Benefits

4.1 Introduction

The purpose of this Part of the RIS is to compare and contrast the costs and benefits of the feasible options and variations against the ‘base case’.

The evaluation of the relative benefits and costs for the feasible options and variations is conducted in the context of how well the policy objective identified in Part 2.2 of this RIS is likely to be achieved – (i.e. how well the options or variations would address the problems discussed in Part 2.1 of this RIS).

Where data exists, discounted⁸⁶ quantitative estimates of costs and benefits are provided over 10 years of implementation. Whilst it is expected that the standards would be reviewed every 5 years, a 10-year analysis is conducted to effectively capture their full impact, taking into consideration implementation lag times. A detailed discussion of the estimation of quantifiable costs and benefits is provided in Appendices 2 and 3 to this RIS. All data used is sufficiently certain, and robust assumptions are stated. However, where cost and benefit data or assumptions is not available, then a quantitative measure is not possible and the assessment is made using qualitative criteria about the achievement of the policy objective. All costs and benefits reported are incremental to the base case (refer to Part 4.2 of this RIS).

The costs and benefits of Options A, B (the practical alternatives), and variations under C1 to C6 are evaluated by using the following criteria (**I to III**) to compare the effectiveness of each option in achieving the relevant part of the policy objective:

- I.** Animal welfare benefits;
- II.** Reduction in regulatory burden; and
- III.** Net compliance costs to industry and government.

As discussed in Part 2.1.3 of the RIS, all options and variations reduce the problem of industry uncertainty by separating guidelines from standards; and therefore industry uncertainty is not used as an assessment criterion.

4.2 The base case

The term ‘base case’ means relevant status quo, or the situation that would exist if the proposed standards were not adopted i.e. the existing Australian standards plus market forces and the relevant federal, state and territory legislation (refer to Appendix 4 for details). The base case provides the benchmark for measuring the incremental costs and benefits of the proposed standards.

For example, cruelty and certain unacceptable animal welfare practices can already be prosecuted under cruelty and aggravated cruelty offence provisions under existing animal welfare legislation e.g. sheep must not be allowed to die from lack of feed or water.

The proposed standards and guidelines are intended to replace the following model code of practice:

- *Model Codes of Practice for the Welfare of Animals: The Sheep*, PISC/SCARM Report Series 29, CSIRO Publishing, 1991 (revised 2006)

The proposed standards and guidelines once endorsed by SCoPI may also over-ride provisions for sheep in the following codes of practice:

⁸⁶ A discount factor of 7% is used for present value calculations in this RIS, as recommended by OBPR.

- *Model Codes of Practice for the Welfare of Animals: Animals at Saleyards*, PISC/SCARM Report Series 31, CSIRO Publishing, 1991
- *Model Codes of Practice for the Welfare of Animals: Livestock at Slaughtering Establishments*, PISC/SCARM Report Series 79, CSIRO Publishing, 2001.

These proposed standards are consistent with those in the:

- *Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock*, PISC Report Series XX, CSIRO Publishing 2009.

It is open to states and territories at any time to adopt the existing model codes as standards, and indeed some have already done so. Similarly, it is open to these jurisdictions to adopt or not adopt the proposed standards as state or territory standards. If and when the proposed standards are submitted to SCoPI for endorsement, the decision to be made by SCoPI will be whether to replace the existing model code and relevant state codes with the proposed standards or alternative options. For this reason, it is necessary for this RIS to assess the costs and benefits of the proposed changes in **standards**, rather than changes in the level of enforcement (which jurisdictions advise are unlikely). In other words, the RIS needs to separate out other factors (such as the level of enforcement) in order to measure the incremental costs and benefits of changes in standards; that is, to compare ‘like’ with ‘like’.

4.3 Evaluation of options and variations relative to the base case

The assessment of the costs and benefits of the options and variations is conducted by discussing each option in terms of its expected incidence and distribution of costs and benefits, relative to the ‘base case’ (as defined in Part 4.2 of the RIS).

It is intended that after public consultation, Option C will entail one or more variations of Option B - C1 to C6, which unlike options A and B are not mutually exclusive. Each variation C1 to C6 is analysed using the same criteria as with Options A and B. These variations have been requested by government and industry for further investigation in this RIS process. Variations C1 to C6 would each involve the issuing and promotion of national standards (same as Option B), to be reviewed once every 5 years by SCoPI. These agreed national standards would become regulations and would be mandatory. Like Option B, any such variations of the mandatory national standards would also replace relevant state or territory codes of practice that currently exist under the ‘base case’.

The data used in this analysis and the assumptions and qualifications to the data on which the costs and benefits have been estimated are provided in the appendices.

A list of the proposed national standards with negligible incremental costs relative to the base case is provided in Appendix 5.

In order to consolidate the analysis by removing duplication and thereby making the options and variations easier to compare, the following main benefit and cost features of the proposed national standards are outlined in Part 4.3.1 and 4.3.2, respectively. The discussion of options therefore highlights their differences, thereby avoiding the repetition of text and figures.

4.3.1 Benefit drivers of the proposed national standards

This part of the RIS highlights the main benefit drivers, which underlie the proposed standards. These are identified as quantifiable and unquantifiable benefits in terms of improved welfare outcomes and reduced regulatory burden.

Drivers of unquantifiable animal welfare benefits – Criterion I

The UK FAWC ‘Five Freedoms’ form a reasonable framework for the description and consideration of animal welfare benefits addressed in the two feasible Options and six feasible variations (the key operating words are highlighted). The list does not represent a priority or hierarchy of needs or the basis for ranking the impact of welfare insult. Animal welfare’ is a difficult term to define and has several dimensions including the mental and physical aspects of the animal’s well-being, as well as people’s subjective ethical preferences. However, this RIS does not deal with perceived benefits of the options; but rather looks strictly at factual considerations, based on scientific evidence where available.

1. Freedom from Hunger and Thirst - by ready access to fresh water and a diet to maintain full health and vigour.
2. Freedom from Discomfort - by providing an appropriate environment including shelter and a comfortable resting area.
3. Freedom from Pain, Injury or Disease - by prevention or rapid diagnosis and treatment.
4. Freedom to Express Normal Behaviour - by providing sufficient space, proper facilities and company of the animal's own kind.
5. Freedom from Fear and Distress - by ensuring conditions and treatment which avoid mental suffering.⁸⁷

The standards take a balanced approach to address risks to the welfare of sheep in all of these areas. There is a focus on developing these standards that address the issues of husbandry procedures that cause pain, and confinement issues. These are issues of commission or direct intervention by humans as opposed to issues of omission or mismanagement. In the former, humans could take a more proactive role in the management of welfare risk and these standards direct what is reasonable.

The relevant proposed standards for addressing *animal welfare problems*, identified in Part 2.1, are directed at providing benefits to sheep welfare, from better compliance often as a result of explicitly stating implied standards of welfare. In some cases the standards spell out unacceptable behaviours that could otherwise result in a cruelty prosecution. Some jurisdictions already have equivalent legislation or standards under the base case. Welfare benefits and jurisdictions where an improvement in welfare is expected are indicated, as follows:

- **Risk management of extreme weather, natural disasters, disease, injury and predation:**

- *Proposed standard S3.2 - must ensure the inspection of sheep at intervals and at a level appropriate to the production system and the risk to the welfare of sheep.* Uninspected sheep in all states and territories would achieve welfare benefits except TAS where inspection is already required as part of the base case. As shown in Table 10, this standard has the potential to benefit the current number of uninspected sheep, which is *an unknown proportion of 70.75 million*⁸⁸ sheep per annum.

- **Handling and husbandry:**

- *Proposed standard S5.1 – must handle sheep in a reasonable manner.* Mishandled sheep in all states and territories would receive some welfare benefits. As shown in Table 10, this has the potential to benefit the current number of mishandled sheep, which is *an unknown proportion of 73.10 million* sheep per annum;
- *Proposed standard S5.2 – must ensure a dog that habitually bites is muzzled when working sheep.* Sheep in all states and territories would receive welfare benefits from no longer being

⁸⁷ < <http://www.fawc.org.uk/freedoms.htm> >

⁸⁸ 73,098,762 sheep across Australia less 2,344,469 in Tasmania where inspection is already covered under the base case

bitten by dogs. The number of sheep that would otherwise be bitten by non-muzzled dogs remains unknown. However, as discussed in Part 2.1 of this RIS, dogs are often employed as part of best practice mustering activities. Therefore any welfare benefit obtained is likely to be minor, as where a biting dog is detected swift remedial action is usually undertaken under the base case;

- *Proposed standard S5.3 – must ensure a sheep is shorn before the wool reaches 250mm in length.* Sheep with more than 250mm length of wool in all states and territories would obtain welfare benefits except TAS where this is already a requirement under the base case. However, an unknown number of sheep would receive welfare benefits in having their wool reduced below lengths greater than 250mm. There is a significant economic disadvantage to producers where wool is left to grow over 250mm and this is a strong driver of appropriate behaviour. Welfare benefits would be driven from a minor increase in compliance from explicitly stating implied standards of care, which would make prosecution under cruelty provisions much easier. Therefore any welfare gain is likely to be very minor and unquantifiable;

- *Proposed standard S5.4 – must consider the welfare of sheep when using an electric prod.* Sheep currently prodded electrically (in an inappropriate manner) in all states and territories would receive welfare benefits. However an unknown number of sheep would experience improved welfare resulting from an increase in compliance from explicitly stating implied standards of care, which would make prosecution under cruelty provisions much easier. Therefore any welfare gain is likely to be very minor and unquantifiable;

- *Proposed standard S5.5 – must not trim or grind the teeth of sheep.* Sheep that would otherwise have their teeth trimmed or ground in all states and territories would receive a welfare benefit except NSW, VIC and TAS where no trimming or grinding is allowed under the base case. However a very minor unknown number of sheep would be affected resulting from an increase in compliance from explicitly stating implied standards of care. Therefore any welfare gain is likely to be minor and unquantifiable;

- *Proposed standard S5.6 – must not alter the anatomy of the prepuce by incising the surrounding skin (pizzle dropping) of sheep.* Sheep that would otherwise have pizzle dropping performed on them in all states and territories would receive welfare benefits. Pizzle dropping is almost unknown in the sheepmeat industry and has lost favour amongst the broader wool industry. However an unknown number of sheep would be affected resulting from an increase in compliance from explicitly stating implied standards of care, which would make prosecution under cruelty provisions much easier. Therefore any welfare gain is likely to be very minor and unquantifiable;

- *Proposed standard S5.7 – must ensure that sheep that are tethered are able to exercise daily.* Tethered sheep in all states and territories would receive welfare benefits except NT and ACT where sheep are not known to be tethered. As shown in Table 6 in this RIS, this would improve the welfare of an estimated 1,250 sheep across Australia with 1,000 sheep in NSW and 50 sheep in each of the remaining states of VIC; QLD; SA; WA and TAS;

- **Tail docking and castration:**

- *Proposed standard S6.1 – those performing tail-docking and castration must have the relevant knowledge, experience and skills or be under the direct supervision of a person who has the relevant knowledge, experience and skills.* A proportion of tail docked and castrated sheep in all states and territories would receive welfare benefits. As shown in Table 3 in this RIS, 701 farmhand employees or contractors per annum would be required to receive on-the-job training with the majority in NSW, VIC and SA equal to 262, 175, and 109, respectively (see Part 2.1.2 of the RIS for discussion). It is also highly probable that a proportion of these 701 workers already receive training and work in supervised environments. The proportion of 33.29 million sheep that are tail docked and 16.65 million sheep that are castrated that would have improved

welfare due to better skilling and supervision – remains unknown, but is a function of the number of sheep that are currently tail docked and castrated by unskilled farmhands;

- *Proposed standard S6.3 – must leave a docked tail stump of a sheep with at least two palpable free joints remaining.* Tail docked sheep that would otherwise be left with no palpable joints in all states and territories would receive welfare benefits. Tail docked sheep with at least one palpable joint would not receive welfare benefits. As discussed in Part 2.1.2 of this RIS a *high but unknown proportion of 33.29 million sheep* are tail docked and left with tails that are too short (no palpable joints). The welfare benefits are a function of the number of sheep that are currently tail docked leaving tails that are too short;

- **Breeding management:**

- *Proposed standard S8.2 – a person must be a veterinarian, or operating under veterinary supervision, to perform surgical embryo transfer or laparoscopic insemination of a sheep.* Sheep undergoing ET or LAI without veterinarian supervision in all states and territories would be affected. There would be a minor unquantifiable improvement in welfare from deterring ‘rare’ cases of non-compliance.

- **Intensive sheep production systems:**

- *Proposed standard S9.4 - must not allow the faeces and urine to accumulate to the stage that compromises the welfare of a sheep in an intensive production system.* Sheep in inadequately cleaned sheds would receive welfare improvements in NSW, VIC and SA. As shown in Table 8 in this RIS, proposed standard S9.4 would affect 20 sheep in NSW and 20 in VIC and 10 sheep in SA. Therefore, proposed standard S9.4 is likely to provide welfare benefits to a small number of sheep.

Drivers of quantifiable benefits of a reduction in regulatory burden – Criterion II

- **Mulesing and training:**

- *Proposed standard S7.1 – those performing mulesing must have the relevant knowledge, experience and skills or be under the direct supervision of a person who has the relevant knowledge, experience and skills.* In the case of employees, training costs are usually met by their employer; however, contractors would incur training costs themselves. Employers of farmhands and contractors undertaking mulesing in all states and territories would benefit from reduced training costs under the base case of \$647 per person (see Part 2.1.4 for discussion)). Proposed standard 7.1 would result in an estimated **\$2.61m reduction in training and accreditation costs** over 10 years and in present value dollars⁸⁹ for mulesing procedures - as summarised in Table 11 in this RIS. The largest beneficiary of this standard would be 233 employers of farmhands or contractors in NSW (see Table 11 in this RIS), 130 in VIC, 98 in SA, and 93 in WA. However the number of businesses (i.e. farms) and contractors affected by inconsistencies is currently unknown; but they would benefit from this proposed standard.

Table 11 – Summary of quantifiable 10-year incremental benefit of proposed standard 7.1 under Option B by state and territory – 2012-13 dollars⁹⁰

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Stakeholders affected	233	130	18	98	93	17	-	1	590
Estimated reduction in regulatory burden	\$1,032,120	\$573,567	\$79,492	\$434,643	\$409,771	\$75,979	\$0	\$3,019	\$2,608,591

⁸⁹ Discounted using a 7% discount rate

⁹⁰ See Table A2.12 of Appendix 2 for source of estimates.

- **Tail docking and castration:**

- *Proposed standard S6.4 – must not castrate sheep over 6 months old without pain relief.* Proposed standards creating national consistency with respect to castration would lead to lower transaction costs in the economy as a whole, as well as savings for individual businesses operating across jurisdictional boundaries.⁹¹ Businesses in VIC that would otherwise need to employ the supervision of a veterinarian to perform castration under the base case would no longer be required to do so and could use a contractor (see discussion of inconsistency in Part 2.1.4). There are an estimated 1,777⁹² male lambs over 6 months castrated in VIC every year (see Table 4 in this RIS). The time cost difference between a veterinarian and a contractor in administering Xylazine 20 and Lignocaine would be \$1.67⁹³ and \$2.33⁹⁴ per lamb, respectively. The total time cost savings of administering pain relief would be \$4.00 per lamb and given that there are 1,777 male lambs per annum this would bring the reduction in regulatory burden over 10 years to **\$71,080** or **\$46,657** in 2012-13 dollars. However the number of businesses affected by inconsistencies and the number of sheep involved is currently unknown; but they would benefit from this proposed standard.

Drivers of unquantifiable benefits of a reduction in regulatory burden – Criterion II

Proposed standards creating national consistency with respect to handling and husbandry would lead to lower transaction costs in the economy as a whole, as well as savings for individual businesses operating across jurisdictional boundaries.⁹⁵

- **Handling and husbandry:**

- *Proposed standard S5.5 – must not trim or grind the teeth of sheep.* Businesses that would otherwise have the teeth of their sheep trimmed or ground⁹⁶ would no longer have an advantage (see discussion of inconsistency in Part 2.1.4), notwithstanding that there are no demonstrated productivity gains from grinding or trimming of sheep (see discussion of teeth grinding and trimming in Part 2.1.2). Moreover, given that this practice is very minor, whilst the number of businesses affected is unknown, proposed standard S5.5 would result in some minor reduction in regulatory burden in farms operating across jurisdictions and no longer needing to implement different sheep dentistry practices. However the number of businesses affected by inconsistencies and the number of sheep involved is currently unknown; but they would benefit from this proposed standard.

4.3.2 Cost drivers of the proposed national standards

This part of the RIS highlights the main cost drivers of the proposed national standards, as shown in Table 12 (i.e. standards that impose the highest costs). This part also helps to contextualise the proposed national standards by illustrating the impact of discounted 2012-13 dollar costs on each state and territory. The effective cost per sheep in each state and territory is shown in Table 13. All other proposed standards have been assessed as imposing negligible incremental costs relative to the base case.

Jurisdictions have proposed no incremental allocation of resources towards enforcement and therefore no additional cost in relation to enforcement with regards to the proposed standards is identified as compared to the base case.

⁹¹ TU Dresden and Fraunhofer Institute, 2000.

⁹² Equal to 3,553,978 castrated male lambs with 0.05% castrated over 6 months based on advice from AHA

⁹³ Based on a time cost of 30 seconds at \$140 = difference between contractor rate of \$80 and veterinarian rate of \$220

⁹⁴ Based on a time cost of 60 seconds at \$140 = difference between contractor rate of \$80 and veterinarian rate of \$220

⁹⁵ TU Dresden and Fraunhofer Institute, 2000.

⁹⁶ Except NSW, VIC and TAS where no trimming or grinding is allowed under the base case

Costs incurred by industry associations in briefing their members about the proposed national standards and preparing QA schemes and other industry programs have not been counted here, because any such costs would be voluntarily incurred i.e. they are not mandated by the proposed standards.

Table 12 – Summary of quantifiable 10-year incremental cost of proposed standards under Option B by state and territory – 2012-13 dollars⁹⁷

Proposed standard	Description of requirement	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	Dog muzzling	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	Exercising tethered sheep	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	Additional on-the-job training for tail docking and castration	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	Cleaning sheep sheds	\$69,231	\$78,403	-	\$33,266	-	-	-	-	\$180,899
Total		\$1,427,096	\$190,457	\$71,738	\$124,243	\$90,741	\$71,966	\$9	\$120	\$1,976,370

Public consultation question 17: Do you have information on how many times a muzzle would need to be replaced, on average, over the lifetime of a sheep dog under the proposed standard S5.2? ⁶

Public consultation question 18: Do you have any information on single penning sheep operations in Australia under the proposed standards in chapter 9?

As shown in Table 12 – the proposed national sheep standards would result in a total incremental cost of \$1.98m over 10 years in 2012-13 dollars. However the largest driver of cost would be proposed national standard S5.7 (i.e. the requirement for exercising tethered sheep). The bulk of this cost (i.e. \$1.29m) would be incurred by NSW, where there an estimated 1,000 tethered sheep. For the purpose of costing it has been assumed that the cheapest option of dealing with tethered sheep would be chosen which would involve erecting a fence and providing a second sheep to allow for better handling of untethered sheep⁹⁸ at a one-off cost of \$1,480 per sheep incurred in the first year of the proposed standard (see Part A2.2 of Appendix 2 for discussion).

Table 13 and other similar tables in this RIS showing average cost per sheep are designed to give an estimated total cost per animal in each jurisdiction and to provide an understanding of the relative impact of standards (or variations) by state or territory. However, some of the standards (variations) will apply only to wool sheep, meat sheep or both and the average cost per sheep is not broken down into this detail. Furthermore, even if it was to be broken down, it is not possible to determine the number of animals either affected or not affected by one or more standards (variations). Therefore, care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

As shown in Table 13, the average net impact per sheep would range from a savings of \$0.05 per sheep in the ACT to a cost of \$0.01 per sheep in NSW.

⁹⁷ See Table A2.12 in Appendix 2 for source of estimates.

⁹⁸ Because sheep are herd animals, multiple sheep are easier to handle than a single untethered sheep.

Table 13 – Average net 10-year cost impact per sheep as a result of the proposed standards under Option B by state and territory –2012-13 dollars⁹⁹

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost of proposed standards	\$394,976	-\$429,767	-\$7,754	-\$310,400	-\$319,030	-\$4,013	\$9	-\$2,899	-\$632,221
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.01	-\$0.03	-\$0.00	-\$0.03	-\$0.02	-\$0.00	\$0.00	-\$0.05	-\$0.01

Based on advice received from jurisdictions on the far more detailed *Land Transport Standards*¹⁰⁰, a reasonable assumption is made that there will be negligible incremental costs in enforcing the proposed standards compared to the existing code under the base case.

4.3.3 Option A: (non-regulatory option – voluntary national guidelines)

Option A would involve the issuing and promotion of agreed national risk-based guidelines once every 5 years by SCoPI. These agreed national guidelines would encompass ‘should statements’ as opposed to ‘must statements’ and, unlike the proposed standards, these guidelines would not become regulations and therefore would not be mandatory (i.e. adherence would be voluntary).¹⁰¹

These agreed national guidelines would be additional to industry guidelines or Quality Assurance programs in the ‘base case’. The voluntary national guidelines would also be additional to existing state or territory standards and codes of practice and guidelines under the ‘base case’.

Unquantifiable incremental net benefits of Option A (Criterion I – animal welfare)

Option A would be likely to lead to improved animal welfare outcomes, depending on the level of voluntary adherence with the national guidelines, through a better management of risks to animal welfare in both sheep meat and wool farms. Specifically, some improvements to the welfare of animals would be expected in ensuring the provision of adequate food and water, suitable environments, health care, opportunity to express most normal behaviours and protection from fear and distress. Areas for potential improvements relate to:

- Risk management of extreme weather, natural disasters, disease, injury and predation;
- Handling and husbandry;
- Tail docking and castration;
- Breeding management; and
- Intensive sheep production systems.

As discussed in Part 4.1.3 of this RIS some improvement in welfare is expected; but the extent of such improvement is unknown. However, any resulting improvement over the base case is likely to be significantly less than that which would occur under a situation of mandatory compliance with enforceable, risk-based and clearly understood standards.

Potential and unquantifiable incremental net costs of Option A (Criterion III –adherence costs)

⁹⁹ See Table A2.13 of Appendix 2 for source of estimates

¹⁰⁰ Tim Harding & Associates, 2008

¹⁰¹ Compliance is not relevant as guidelines are not binding or enforceable

Under Option A the sheep meat and wool industries would incur voluntary costs, depending on the degree of adherence to the voluntary guidelines. However there would be *no incremental costs imposed under Option A* as compared to the ‘base case’. Importantly, *any voluntary cost incurred* would be driven by the degree of adherence to the guidelines. A description of potential voluntary costs that might be incurred is summarised in Table 12 in Part 4.3.2 of this RIS. The cost per state or territory under Option A will again depend on the degree of adherence to the guidelines.

Public consultation question 19: Do you believe that the net benefits achieved under Option A including the welfare benefits and reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under Option A be superior to other options?

4.3.4 Option B: (the proposed national standards)

Option B would involve the issuing and promotion of agreed national risk-based standards once every 5 years by the SCoPI. These agreed national standards would encompass ‘must statements’ and, unlike Option A, these standards would become regulations and would be mandatory (i.e. compliance would be mandatory). The mandatory national standards would replace existing state or territory model codes of practice and guidelines under the ‘base case’.

Unquantifiable incremental net benefits of Option B (Criterion I – animal welfare)

As compared with Option A, Option B would lead to much more improved animal welfare outcomes, through better management of risks to animal welfare in sheep farms due to mandatory compliance with enforceable risk-based standards. Specifically, there would be improvements to the welfare of animals in ensuring adequate food and water, suitable environments, health care, opportunity to express most normal behaviours and protection from fear and distress. A detailed discussion of additional benefits and their drivers (i.e. the proposed national standards) is provided in Part 4.3.1 of this RIS. In particular, there would be improvements in the:

- Risk management of extreme weather, natural disasters, disease, injury and predation where all uninspected sheep across all states and territories would achieve welfare benefits except TAS where inspection is already required as part of the base case. As shown in Table 10, this has the potential to affect *an unknown proportion of 70.75 million*¹⁰² sheep per annum;
- Handling and husbandry in relation to handling of all sheep in a reasonable manner; muzzling all dogs that habitually bite sheep; keeping all wool lengths to below 250mm in length (except TAS); considering the welfare of all sheep when using an electric prod; eliminating the practice of trimming and grinding of sheep teeth (except NSW, VIC and TAS); eliminating the practice of pizzle dropping; ensuring exercise for tethered sheep (except NT and ACT) thereby promoting the welfare of 1,250 sheep in Australia with up to 1,000 sheep in NSW and up to 50 sheep in each of the remaining states of VIC, QLD, SA, WA and TAS¹⁰³;
- Practice of tail docking and castrations in terms of on-the-job training and supervision of all 701 farmhand employees or contractors per annum with the majority in NSW, VIC and SA equal to 262, 175, and 109, respectively (see Part 2.1.2 of the RIS for discussion). However it is not known what proportion of the 33.29 million sheep that are tail docked and the 16.65 million sheep that are castrated would have improved welfare due to better skilling and

¹⁰² 73,098,762 sheep across Australia less 2,344,469 in Tasmania where inspection is already covered under the base case

¹⁰³ For a detailed discussion on the nature of the welfare benefits to be attained (i.e. the welfare problems to be addressed see Part 2.1.2 of this RIS)

supervision. Moreover, an unknown proportion of 33.29 million tail-docked sheep would no longer be left with tails that are too short (i.e. no palpable joints);

- Breeding management and deterrence of all ‘rare’ cases of sheep undergoing ET or LAI without veterinarian supervision;
- Incidence of all sheep in inadequately cleaned sheds would receive welfare improvements in NSW, VIC and SA (20 sheep in NSW, 20 in VIC and 10 sheep in SA).

The number of sheep affected by particular standards across Australia is summarised in Table 14. The breakdown in welfare impacts and number of sheep affected by state and territory is summarised in Appendix 6 of this RIS.

Table 14 – Summary of number of sheep affected annually by welfare standards under Option B as compared to the base case¹⁰⁴

Welfare issue resolved under Option B	Number of sheep affected
Inspection of sheep at intervals	% of 70,754,293
Handle sheep in a reasonable manner	% of 73,098,762
Dog that habitually bites is muzzled	Unknown (minor)
Sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
Consider the welfare of sheep when using an electric prod	Unknown
Must not trim or grind the teeth of sheep	Unknown (minor)
No pizzle dropping	Unknown (minor)
Sheep that are tethered are able to exercise daily	1,250
Tail docking with skilled practitioner or under supervision	% of 33,289,264
Castration with skilled practitioner or under supervision	% of 16,644,632
At least two palpable free joints remaining with tail docked sheep	% of 33,289,264
LAI or ET performed by veterinarian or under veterinary supervision only	150,000
Faeces and urine must not compromise the welfare of a sheep	50

Quantifiable incremental net benefits of Option B (Criterion II – reduced regulatory burden)

Option B would impose incremental benefits in removing unnecessary regulation requiring training and accreditation for those performing mulesing procedures under proposed standard S7.1, estimated to be *\$2.61m* over 10 years in 2012-13 dollars¹⁰⁵, (see Table 11 of this RIS in Part 4.3.1). As shown in Table 11, the benefits would be mainly attributable to, NSW, VIC, SA and WA under proposed national standard S7.1 with an incremental benefit of *\$1.03m*, *\$0.57m*, *\$0.43m* and *\$0.41m*, respectively, in 2012-13 dollars.

Moreover, under proposed national standard S6.4, there would be a reduction in regulatory burden for VIC sheep farmers who would be provided the opportunity to administer pain relief with the castration of 1,777 sheep per annum with the use of contractors rather under veterinary supervision. The reduction in regulatory burden would be an estimated *\$46,657* over 10 years in 2012-13 dollars.

The total reduction in regulatory burden under the proposed national standards S7.1 and S6.4, under Option B is estimated to be *\$2,66m* over 10 years in 2012-13 dollars.

¹⁰⁴ See Table A6.1 of Appendix 6 for source of estimates

¹⁰⁵ Discounted at a rate of 7%

Unquantifiable incremental net benefits of Option B (Criterion III – reduced regulatory burden)

Option B would be effective in promoting national consistency. Industry-wide standards in relation to teeth grinding and trimming of sheep (S5.5) would have a positive effect on the economy and would reduce transaction costs of compliance, especially for businesses operating in more than one jurisdiction – the number of which is currently unknown, but is being sought via public consultation questions elsewhere in this RIS. The AAWS would have increased ability to facilitate improved consistency of animal welfare outcomes across states and territories.

Quantifiable incremental net costs of Option B (Criterion III – compliance costs)

Option B would impose incremental costs estimated to be **\$1.98m** over 10 years in 2012-13 dollars¹⁰⁶, as estimated in Table 12 of this RIS. The costs would be mainly attributable to the requirement for exercising tethered sheep¹⁰⁷ under proposed national standard S5.7. This incremental cost would amount to an estimated **\$1.62m** in 2012-13 dollars (see Table 12). As shown in Table 12, the most impacted state would be NSW with respect to the proposed national standard S5.7 with an incremental one-off cost of **\$1.29m** in 2012-13 dollars.

Net quantifiable benefit of Option B

Based on the discussion above, and due principally to the reduction in regulatory burden of \$2.66m over 10 years – the net incremental quantifiable benefit of option B is estimated to be \$0.68m over 10 years in 2012-13 dollars. As shown in Table 13 – VIC, WA and SA would receive \$0.43m, \$0.32m and \$0.31m over 10 years in net quantifiable benefits whilst NSW would incur a net incremental cost of \$0.39m.

Public consultation question 20: Do you believe that the net benefits achieved under option B, including the welfare benefits and reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under Option B be superior to other options?

4.3.5 Variation C1: (variation of proposed national standard S7.3)

It is proposed that a variation or combination of variations would become a possible option/alternative to Option B under Option C in the Decision RIS. The public consultation process seeks the views and advice of interested parties in the further formulation of variations to the existing proposals. Selected additional variations may be investigated and reported in the decision RIS.

Variation C1 would be a variation of the proposed national standards that would amend proposed standard S7.3 and would require pain relief for *all mulesing* and not just for sheep that are six months to 12 months of age.

Unquantifiable incremental net benefits of Variation C1 (Criterion I – animal welfare)

As with Option B, Variation C1 would lead to improved animal welfare outcomes, with a detailed discussion of additional welfare benefits and their drivers provided in Part 4.3.1 of this RIS. However, in addition to Option B, Variation C1 would require a topical anaesthetic formulation applied immediately after the mulesing cut and would provide additional pain relief benefits for an

¹⁰⁶ Discounted at a rate of 7%

¹⁰⁷ It is likely that this will result in persons in charge opting to incur a one-off cost and erect a fence and provide a companion sheep to allow for the better management of untethered sheep rather than exercise sheep at a high annual cost

estimated 4.86 million lambs per annum (see Table 1 in this RIS). The majority of lambs affected by this additional welfare benefit would include WA, NSW and SA with an estimated 1.54 million, 1.29 million and 0.93 million lambs affected per annum, as shown in Table 1 in this RIS.

This variation offers certainty and incremental management adjustment to industry compared to other potential proposals to further restrict mulesing (lower ages as in variation C2 or a phase out). There is a risk to industry that this step could be perceived as inadequate progress towards calls for a total mulesing phase out. There are also concerns that the application of Tri-Solfen is an inadequate level of pain relief but there are no other available options for sheep. A total mulesing phase out has not been asked to be considered at this time because of the overall negative impacts on the welfare of a large proportion of the national sheep flock and consequential impacts on farm viability.

Quantifiable incremental net benefits of Variation C1 (Criterion II – reduced regulatory burden)

Variation C1 would result in the same level of reduced regulatory burden as Option B. The total reduction in regulatory burden under a variation of the proposed national standards S7.1 (removing requirement of formal training and accreditation for mulesing) and S6.4 (removing requirement of castration by veterinarian only in VIC), under Variation C1 is estimated to be **\$2,66m** over 10 years in 2012-13 dollars.

Unquantifiable incremental net benefits of Variation C1 (Criterion II – reduced regulatory burden)

Identical to Option B, Variation C1 would be effective in promoting national consistency in relation to teeth grinding and trimming of sheep (S5.5). This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

Quantifiable incremental net costs of Variation C1 (Criterion III – compliance costs)

Variation C1 would impose incremental costs estimated to be **\$32.28m** over 10 years in 2012-13 dollars¹⁰⁸, as summarised in Table 15 of this RIS. The costs would be mainly attributable to the requirement for pain relief for all mulesing under the variation to proposed national standard S7.3. This incremental cost would amount to an estimated **\$30.31m** in 2012-13 dollars (see Table 15). As shown in Table 14, the most impacted states would be WA, NSW and SA with an estimated incremental 10-year cost of \$9.68m, \$9.44m and \$5.95m, respectively in 2012-13 dollars.

Table 15 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C1 by state and territory – 2012-13 dollars¹⁰⁹

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403	\$0	\$33,266	\$0	\$0	\$0	\$0	\$173,228
Pain relief all mulesing (Variation on	\$8,015,625	\$3,654,337	\$2,111,594	\$5,826,034	\$9,586,488	\$1,112,251	\$0	\$0	\$30,306,329

¹⁰⁸ Discounted at a rate of 7%

¹⁰⁹ See Table A3.5 of Appendix 3 for source of estimates

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
proposed standard 7.3)									
Total	\$9,442,721	\$3,844,794	\$2,183,332	\$5,950,278	\$9,677,229	\$1,184,217	\$9	\$120	\$32,275,028

Table 16 gives the average net cost impact per sheep ranging from a cost savings of \$0.05 in the ACT to a cost of \$0.66 in WA.

Table 16 – Average net 10-year cost impact per sheep as a result of the proposed standards under Variation C1 by state and territory –2012-13 dollars¹¹⁰

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost	\$8,410,601	\$3,224,569	\$2,103,840	\$5,515,634	\$9,267,458	\$1,108,238	\$9	-\$2,899	\$29,619,780
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.31	\$0.21	\$0.58	\$0.50	\$0.66	\$0.47	\$0.00	-\$0.05	\$0.41

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

Public consultation question 21: Do you believe that the benefits likely to be achieved under Variation C1 of Option B, including the welfare benefits of pain relief with all mulesing and reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under and Variation C1 of Option B be superior to other options?

4.3.6 Variation C2: (variation of proposed national standard S7.2)

Variation C2 would involve restricting the mulesing age to less than 6 months of age and this provides a variation to proposed national standard S7.2 (which allows mulesing between 24hrs old and 12 months old). It would also make the proposed standard S7.3 - mulesing at 6 to 12 months old with pain relief, redundant. This proposal means that the most likely outcome is that animals required to be mulesed would then be done before 6 months of age.

Unquantifiable incremental net benefits of Variation C2 (Criterion I – animal welfare)

As with Option B, Variation C2 would lead to improved animal welfare outcomes, with a detailed discussion of additional welfare benefits and their drivers provided in Part 4.3.1 of this RIS. However, in addition to Option B, Variation C2 would restrict mulesing to lambs less than 6 months of age and would provide additional pain relief benefits for an estimated 30,000 lambs per annum (see Table 2 in this RIS). The majority of lambs affected by this additional welfare benefit would include those in NSW, WA and SA with an estimated 9,143, 8,419 and 6,199 lambs affected per annum, respectively, as shown in Table 2 in this RIS. This variation offers certainty and incremental management adjustment to industry compared to other potential proposals to further restrict mulesing by lowering the permissible age for the procedure. There is a risk to industry that this step could be perceived as inadequate progress towards calls for a total mulesing phase out as only 30,000 additional lambs would be affected over and above Option B. A total mulesing phase out has not been asked to be considered at this time because of the overall negative impacts on the welfare of a large proportion of the national sheep flock and consequential impacts on farm viability.

¹¹⁰ See Table A3.6 of Appendix 3 for source of estimates

Quantifiable incremental net benefits of Variation C2 (Criterion II – reduced regulatory burden)

Variation C2 would result in the same level of reduced regulatory burden as Option B. The total reduction in regulatory burden under a variation of the proposed national standards S7.1 (removing requirement of formal training and accreditation for mulesing) and S6.4 (removing requirement of castration by veterinarian only in VIC), under Variation C2 is estimated to be **\$2,66m** over 10 years in 2012-13 dollars.

Unquantifiable incremental net benefits of Variation C2 (Criterion II – reduced regulatory burden)

Identical to Option B, Variation C2 would be effective in promoting national consistency in relation to teeth grinding and trimming of sheep (S5.5). This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

Quantifiable incremental net costs of Variation C2 (Criterion III – compliance costs)

Variation C2 would impose incremental costs estimated to be **\$3.54m** over 10 years in 2012-13 dollars¹¹¹, as summarised in Table 17 of this RIS. The costs would be mainly attributable to the:

- Restriction of mulesing to lambs less than 6 months of age under the variation to proposed national standard S.7.2 - with an estimated 10-year cost of **\$1.58m** in 2012-13 dollars (see Table 17); and
- Requirement for exercising tethered sheep under proposed national standard S5.7 - with an estimated 10-year cost of **\$1.62m** in 2012-13 dollars (see Table 17).

As shown in Table 17, the most impacted states would be NSW, WA, SA and VIC with an estimated 10-year incremental cost of \$1.91m, \$0.53m, \$0.45m, and \$0.44m, respectively in 2012-13 dollars.

Table 17 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C2 by state and territory – 2012-13 dollars¹¹²

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403	\$0	\$33,266	\$0	\$0	\$0	\$0	\$173,228
Mulesing < 6 months only	\$480,127	\$252,136	\$42,469	\$325,537	\$442,100	\$33,013	\$0	\$0	\$1,575,383
Total	\$1,907,223	\$442,593	\$114,207	\$449,781	\$532,841	\$104,979	\$9	\$120	\$3,544,081

Table 18 gives the average net cost impact per sheep ranging from a cost a savings of \$0.05 in the ACT to a cost of \$0.03 in NSW.

¹¹¹ Discounted at a rate of 7%

¹¹² See Table A3.11 of Appendix 3 for source of estimates

Table 18 – Range of average 10-year cost per sheep as a result of the proposed standards under Variation C2 by state and territory –2012-13 dollars¹¹³

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost	\$875,103	-\$177,631	\$34,715	\$15,137	\$123,070	\$29,000	\$9	-\$2,899	\$888,833
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.03	-\$0.01	\$0.01	\$0.00	\$0.01	\$0.01	\$0.00	-\$0.05	\$0.01

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

Public consultation question 22: Do you believe that the benefits likely to be achieved under Variation C2 of Option B, including the welfare benefits of requiring mulesing to be performed under 6 months of age and reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under and Variation C of Option B be superior to other options?

4.3.7 Variation C3: (variation of proposed national standard S9.7)

Variation C3 would involve banning single penning of sheep for fine wool production (<13 microns) and this provides a variation to proposed standard S9.7 (which allows for single penning as long as the sheep is able to turn around, see, hear, smell, and touch neighbouring sheep). The concern here is that individually housed sheep are deprived of social interaction with other sheep and that such housing would therefore be seen as cruel as it would go against the principles of 'The Five Freedoms'.

The value in this proposed standard for industry and Australia is the ability to clearly communicate that Australia does not allow this management system for the benefit of domestic and international markets. It removes this reputational risk and uncertainty for industry.

Unquantifiable incremental net benefits of Variation C3 (Criterion I – animal welfare)

As with Option B, Variation C3 would lead to improved animal welfare outcomes, with a detailed discussion of additional welfare benefits and their drivers provided in Part 4.3.1 of this RIS. However, Variation C3 would *not provide any additional more welfare benefits than Option B*. This is because according to the Australian Superfine Wool Growers Association (ASWGA), *no single pen shed sheep operations are left in the country*. Furthermore, leading buyers of fine wool have placed a market ban on wool from single pen shed sheep (see Part A3.3 of Appendix 3 for a detailed discussion).

Quantifiable incremental net benefits of Variation C3 (Criterion II – reduced regulatory burden)

Variation C3 would result in the same level of reduced regulatory burden as Option B. The total reduction in regulatory burden under a variation of the proposed national standards S7.1 (removing requirement of formal training and accreditation for mulesing) and S6.4 (removing requirement of castration by veterinarian only in VIC), under Variation C3 is estimated to be **\$2,66m** over 10 years in 2012-13 dollars.

¹¹³ See Table A3.12 of Appendix 3 for source of estimates

Unquantifiable incremental net benefits of Variation C3 (Criterion II – reduced regulatory burden)

Identical to Option B, Variation C3 would be effective in promoting national consistency in relation to teeth grinding and trimming of sheep (S5.5). This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

Quantifiable incremental net costs of Variation C3 (Criterion III – compliance costs)

Identical to Option B, Variation C3 would impose incremental costs estimated to be **\$1.98m** over 10 years in 2012-13 dollars¹¹⁴ (see Table 12).

Public consultation question 23: Do you believe that the benefits likely to be achieved under Variation C3 of Option B, including the welfare benefits of banning single penning of sheep and reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under and Variation C3 of Option B be superior to other options?

4.3.8 Variation C4: (variation of proposed national standard S5.7)

Variation C4 would involve banning tethering of sheep. This would be a variation to proposed national standard 5.7 (which requires the daily exercise of tethered sheep). This variation deals with the real welfare issue of tethering which is the deprivation of social interaction with other sheep. It is expected that the outcome of banning tethering would result in persons in charge creating suitable fenced areas for sheep and provide companion sheep – identical to Option B.

The value in this proposed standard for industry and Australia is the ability to clearly communicate that Australia does not allow this management system for the benefit of domestic and international markets. It removes this reputational risk and uncertainty for industry.

Unquantifiable incremental net benefits of Variation C4 (Criterion I – animal welfare)

As with Option B, Variation C4 would lead to improved animal welfare outcomes, with a detailed discussion of additional welfare benefits and their drivers provided in Part 4.3.1 of this RIS. However, Variation C4 would *not provide any additional welfare benefits than Option B*.

Quantifiable incremental net benefits of Variation C4 (Criterion II – reduced regulatory burden)

Variation C4 would result in the same level of reduced regulatory burden as Option B. The total reduction in regulatory burden under a variation of the proposed national standards S7.1 (removing requirement of formal training and accreditation for mulesing) and S6.4 (removing requirement of castration by veterinarian only in VIC), under Variation C4 is estimated to be **\$2,66m** over 10 years in 2012-13 dollars.

Unquantifiable incremental net benefits of Variation C4 (Criterion II – reduced regulatory burden)

¹¹⁴ Discounted at a rate of 7%

Identical to Option B, Variation C4 would be effective in promoting national consistency in relation to teeth grinding and trimming of sheep (\$5.5). This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

Quantifiable incremental net costs of Variation C4 (Criterion III – compliance costs)

Identical to Option B, Variation C4 would impose incremental costs estimated to be *\$1.98m* over 10 years in 2012-13 dollars¹¹⁵ (see Table 12).

Public consultation question 24: Do you believe that the benefits likely to be achieved under Variation C4 of Option B, including the welfare benefits of banning tethering of sheep and reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under and Variation C4 of Option B be superior to other options?

4.3.9 Variation C5: (variation of proposed national standard S8.1)

Variation C5 would mandate pain relief for laparoscopic artificial insemination (LAI) and embryo transfer (ET). This provides a variation to proposed national standard S8.1 (which simply states that a person performing artificial breeding procedures on a sheep must not cause unreasonable pain, distress or injury to a sheep).

Whilst many ewes undergoing these procedures currently do receive pain relief, this standard sets an appropriate level of pain relief management that will contribute to the ongoing community acceptance of these specialised breeding procedures. ET requires an anaesthetic to be administered for sheep welfare and for effective restraint; and as this is an existing practice, ET does not receive further consideration here.

These artificial breeding procedures are valuable because they permit rapid genetic progress and the faster breeding of better sheep. The immediate value in this proposed standard for industry and Australia is the ability to clearly communicate that Australia does not allow these invasive procedures to be done without pain relief for the benefit of domestic and international markets. It removes this risk to Australia's international reputation; and also uncertainty for industry.

Unquantifiable incremental net benefits of Variation C5 (Criterion I – animal welfare)

As with Option B, Variation C5 would lead to improved animal welfare outcomes, with a detailed discussion of additional welfare benefits and their drivers provided in Part 4.3.1 of this RIS. However, in addition to Option B, Variation C5 would result in pain relief benefits for an estimated 150,000 breeding ewes per annum currently going through LAI procedure without pain relief (see Table 10 in this RIS). The majority of lambs affected by this additional welfare benefit would include NSW, VIC, WA and SA with an estimated 55,302, 30,992, 29,893 and 21,998 breeding ewes affected per annum, respectively, as shown in Table 10 in this RIS.

Quantifiable incremental net benefits of Variation C5 (Criterion II – reduced regulatory burden)

¹¹⁵ Discounted at a rate of 7%

Variation C5 would result in the same level of reduced regulatory burden as Option B. The total reduction in regulatory burden under a variation of the proposed national standards S7.1 and S6.4, under Variation C5 is estimated to be **\$2,66m** over 10 years in 2012-13 dollars.

Unquantifiable incremental net benefits of Variation C5 (Criterion II – reduced regulatory burden)

Identical to Option B, Variation C5 would be effective in promoting national consistency in relation to pain relief for LAI and ET. This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

Quantifiable incremental net costs of Variation C5 (Criterion III – compliance costs)

Variation C5 would impose incremental costs estimated to be **\$3.52m** over 10 years in 2012-13 dollars¹¹⁶, as summarised in Table 19 of this RIS. The costs would be mainly attributable to the requirement for pain relief for all LAI and ET under the variation to proposed national standard S.8.1 - with an estimated 10-year cost of **\$1.55m** in 2012-13 dollars (see Table 19). As shown in Table 19, the most impacted states would be NSW, VIC, WA and SA with an estimated 10-year incremental cost of \$2m, \$0.51m, \$0.4m, and \$0.35m, respectively, in 2012-13 dollars.

Table 19 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C5 by state and territory – 2012-13 dollars¹¹⁷

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403	\$0	\$33,266	\$0	\$0	\$0	\$0	\$180,899
Pain relief for all LAI and ET	\$569,917	\$319,388	\$72,579	\$226,701	\$308,066	\$48,122	\$10	\$1,062	\$1,545,844
Total	\$1,997,013	\$509,845	\$144,317	\$350,944	\$398,807	\$120,088	\$19	\$1,182	\$3,522,214

Table 20 gives the average net cost impact per sheep ranging from a cost a savings of \$0.03 in the ACT to a cost of \$0.04 in NSW.

Table 21 – Range of average 10-year cost per sheep as a result of the proposed standards under Variation C5 by state and territory –2012-13 dollars¹¹⁸

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost	\$964,893	-\$110,379	\$64,825	-\$83,700	-\$10,964	\$44,109	\$19	-\$1,837	\$866,966
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.04	-\$0.01	\$0.02	-\$0.01	-\$0.00	\$0.02	\$0.01	-\$0.03	\$0.01

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

¹¹⁶ Discounted at a rate of 7%

¹¹⁷ See Table A3.16 of Appendix 3 for source of estimates

¹¹⁸ See Table A3.17 of Appendix 3 for source of estimates

Public consultation question 25: Do you believe that the benefits likely to be achieved under Variation C5 of Option B, including the welfare benefits of mandating pain relief for laparoscopic artificial insemination (LAI) and embryo transfer (ET) and a reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under and Variation C5 of Option B be superior to other options?

4.3.10 Variation C6: (variation of proposed national standard S6.3)

Variation C6 requires docked tails to have at least *one free palpable joint* and this provides a variation on proposed standard S6.3 (which requires that a docked tail stump have *two palpable free joints*).

The value in this proposed standard for industry is the reduction in uncertainty by allowing an increased margin for error in the docking procedure and the protection from future compliance activity. The immediate value in this proposed standard for industry and Australia is the ability to clearly communicate that Australia does not allow unacceptably short tail lengths for the benefit of domestic and international markets. It removes this risk to Australia's international reputation and also uncertainty for industry.

Unquantifiable incremental net benefits of Variation C6 (Criterion I – animal welfare)

As with Option B, Variation C6 would lead to improved animal welfare outcomes, with a detailed discussion of additional welfare benefits and their drivers provided in Part 4.3.1 of this RIS. However, Variation C6 would *not provide any additional welfare benefits than Option B* as there is no documented welfare difference in going from one to three palpable joints when tail docking (see discussion in Part 2.1.2 in this RIS).

Quantifiable incremental net benefits of Variation C6 (Criterion II – reduced regulatory burden)

Variation C6 would result in the same level of reduced regulatory burden as Option B. The total reduction in regulatory burden under a variation of the proposed national standards S7.1 and S6.4, under Variation C6 is estimated to be **\$2,66m** over 10 years in 2012-13 dollars.

Unquantifiable incremental net benefits of Variation C6 (Criterion II – reduced regulatory burden)

Identical to Option B, Variation C6 would be effective in promoting national consistency in relation to tail docking. This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

Quantifiable incremental net costs of Variation C6 (Criterion III – compliance costs)

Identical to Option B, Variation C6 would impose incremental costs estimated to be **\$1.98m** over 10 years in 2012-13 dollars¹¹⁹ (see Table 12).

¹¹⁹ Discounted at a rate of 7%

Public consultation question 26: Do you believe that the benefits likely to be achieved under Variation C6 of Option B, including the welfare benefits of mandating one free palpable joint with respect to tail-docking procedures and a reduction in excess regulatory burden, are justified? Would the combination of costs and benefits under and Variation C6 of Option B be superior to other options?

4.4

Selection of Preferred option

The incremental costs and benefits relative to the base case of Option A, Option B (the proposed national standards) and Variations C1 to C6 are provided in Table 20. Although the variations have been costed individually (see below), the incremental cost of Option C is not provided, because it has not yet been determined which combination of variations (C1 to C6) should comprise this option. Selection of a preferred option has been postponed until after public consultation to provide input on the optimum combination of variations under Option C. The consultation process is also expected to result in improved understanding of the welfare benefits that are expected under each of the proposed options and variations. This will assist in understanding the relative welfare benefits and costs for each option/variation so that policy makers have a clear picture of the expected net benefits of the proposed reforms.

There is no significant interdependency between the individual variations. However, if Variations C1 and C2 are adopted (both relate to mulesing), there is not likely to be a reduction in the total number of sheep mulesed to comply with the new standards. Tethering and single penning in sheds are not interchangeable production systems and are done for very different reasons. It is believed that a restriction on one practice will not result in an increase in the other. However, it is open to Ministers to adopt a complementary combination of variations (C1 to C6) amongst those proposed.

Comparing the costs and benefits against the base case is hindered by the inherent inability to quantify benefits to animal welfare.

The three evaluation criteria used were:

- I. Animal welfare benefits
- II. Reduction in regulatory burden; and
- III. Net compliance costs to industry and government.

As shown in Table 21 - Option B and Variations C3, C4 and C6 would be likely to result in the same quantifiable and unquantifiable costs and benefits as compared to the base case; and the largest quantifiable benefit over 10-years. However, Variation C1 is likely to provide for significant unquantifiable welfare benefits over and above Option B and other Variations C2 to C6 – as it would affect an estimated 4.86 million lambs each year and would provide pain relief for the very invasive mulesing procedure; albeit at a higher cost than Option B.

It is important to note the number of sheep alone does not reflect the severity of consequences; but rather it is the combination of:

- Number of animals affected (small or large);

- Duration of practice (one-off or ongoing); and
- Impact of animal husbandry procedure (primarily invasive or less-invasive).

Moreover, the sheep numbers for the variations in Table 21 are not mutually exclusive, because given sheep can be affected by different issues and the preferred combination of variations has not yet been selected. Therefore, even if the number of sheep affected by each issue were known - any summation and inference from such a summation would be misleading and incorrect.

Table 21: Incremental 10-year costs and benefits of Options A and B and Variations C1 to C2 relative to the base case – 2012-13 dollars (\$m)

Option/Variation	I. Incremental Animal welfare benefits (unquantifiable)	Number of sheep affected under Criterion I	II. Reduction in regulatory burden (quantifiable)	II. Reduction in regulatory burden (unquantifiable)	III. Incremental compliance costs to sheep farmers (quantifiable)	Incremental Quantifiable net benefit
Option A (guidelines)	< B	A small undetermined % of 73.1m	\$0	< B	\$0	\$0
Option B (Proposed national standards)	> A	A larger undetermined % of 73.1m	\$2.66	> A	\$1.98	\$0.68
Variation C1 (All mulesing with pain relief)	> B	As with Option B + 4.86m	\$2.66	= B	\$32.28	-\$29.62
Variation C2 (Restriction of mulesing to less than 6 months of age)	> B	As with Option B + 30k	\$2.66	= B	\$3.54	-\$0.89
Variation C3 (Banning tethering)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68
Variation C4 (Banning of single pen shedding of sheep)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68
Variation C5 (All LAI and ET with pain relief)	> B	As with Option B +150k	\$2.66	= B	\$3.52	-\$0.87
Variation C6 (Requirement for one palpable joint)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68

A sensitivity analysis at the 3% discount rate and 10% discount rate reveals no change in the ranking of costs between the Options and Variations, as shown in Table 22.

Table 22: Sensitivity analysis for ranking of costs at the 7%, 3% and 10% discount rate – 2012-13 dollars (\$m)

Ranking of costs	PV 7%	PV 3%	PV 10%
Option A	0	0	0
Option B, Variation C3, C4 and C6	\$1.98	\$2.19	\$1.84
Variation C5	\$3.52	\$4.14	\$3.16
Variation C2	\$3.54	\$4.17	\$3.18
Variation C1	\$32.28	\$40.42	\$27.62

Table 23 shows the incremental 10-year costs and benefits of Variations C1 to C6 relative to Option B.

Table 23: Incremental costs and benefits of Variations C1 to C6 relative to Option B – 2012-13 dollars (\$m)

Option/Variation	I. Incremental Animal welfare benefits (unquantifiable)	II. Reduction in regulatory burden (quantifiable)	II. Reduction in regulatory burden (unquantifiable)	III. Incremental compliance costs to sheep farmers (quantifiable)	Incremental Quantifiable net benefit
Variation C1 (All mulesing with pain relief)	> B	\$0	0	\$30.30	-\$30.30
Variation C2 (Restriction of mulesing to less than 6 months of age)	> B	\$0	0	\$1.57	-\$1.57
Variation C3 (Banning tethering)	0	\$0	0	\$0	\$0
Variation C4 (Banning of single pen shedding of sheep)	0	\$0	0	\$0	\$0
Variation C5 (All LAI and ET with pain relief)	> B	\$0	0	\$1.55	-\$1.55
Variation C6 (Requirement for one palpable joint)	0	\$0	0	\$0	\$0

Finally, Table 24 shows the incremental net cost impact of Options A and B and Variations C1 to C6 per sheep. Option B and Variations C3, C4 and C6 would potentially result in an overall decrease in net cost per sheep. Option C1 would potentially result in an estimated \$0.41 increase in the net cost of a sheep.

Table 24: Incremental average net cost per sheep of Options A and B and Variations C1 to C6 2012-13 dollars

Option/Variation	Incremental net cost per sheep (Australia)
Option A	\$0
Option B	-\$0.01
Variation C1	\$0.41
Variation C2	\$0.01
Variation C3	-\$0.01
Variation C4	-\$0.01
Variation C5	\$0.01
Variation C6	-\$0.01

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

The basis of the selection of the preferred option is the one that generates the greatest net benefit for the community. This step has been postponed awaiting response from public consultation on the appropriate combination of variations which would comprise Option C.

The public consultation seeks the views and advice of interested parties in the further formulation of variations to the existing proposals. Selected additional variations may be investigated and reported in the decision RIS.

The public consultation seeks the views and advice of interested parties in providing information and data that would further assist in the assessment of the impacts (costs and benefits) expected under each of the options/variations.

There will then be a final cost/benefit comparison between Options A, B and C with a view to making a recommendation on a preferred option to SCoPI as part of the Decision RIS.

5.0 Implementation issues

To the extent that the majority of sheep farms are defined as small businesses (i.e. have less than 20 FTE staff) – Variation C1 is not seen as disproportionately impacting on small business. Furthermore, the additional cost per sheep under Variation C1 is likely to be approximately \$0.41 per sheep (based on a total flock of 73.1 million sheep and a total 10-year cost of this option of \$32.28m in 2012-13 dollars). Given that this would represent only 0.5% of the replacement cost of a sheep, which is estimated to be \$80 - Variation C1 would not be seen to be a barrier to entry or a restriction of competition.

The intent of preparing the proposed national standards is to replace the existing MCOP and current jurisdictional standards, if and when adopted by the Standing Council on Primary Industries (SCoPI). The method of implementation is a matter for each jurisdiction according to the provisions of their own enabling legislation.

6.0 Evaluation and review strategy

The effectiveness of the proposed standards will be evaluated when the standards are next reviewed. Indicators will include the extent to which the standards have been:

- Officially adopted and implemented by the various government jurisdictions;
- Adopted as policy by the sheep industry associations;
- Complied with by sheep famers, their employees and contractors; and
- Accepted by the Australian community.

7.0 Conclusions and findings

The key points of the RIS were:

1. The main problems underlying the development of the proposed national standards are those relating to:
 - *Risks to the welfare of sheep* due to deficiencies in the existing MCOP for the welfare of sheep; and to a lesser extent
 - *Uncertainty for industry* due to a lack of clear and verifiable standards; and
 - *Excess regulatory burden* arising from a lack of national consistency and unnecessary standards;

2. The mulesing procedure and associated welfare impacts are of most concern in this RIS; however other painful husbandry procedures discussed include tail docking, castration and laparoscopic artificial insemination (LAI). The number of sheep that could be affected by current poor practices in regards to mulesing, tail docking and castration are potentially significant, however, the extent of such practices is currently unknown. This RIS is seeking greater information from industry and other stakeholders in order to ascertain the magnitude of the problem.

3. In relation to the proposed standards and feasible alternatives the following overarching policy objective is identified:

To minimise risks to sheep welfare and to reduce regulatory burden in a way that is practical for implementation and industry compliance.

4. In terms of the policy development process and consultation to date, a number of alternative positions and views expressed by governments, industry and animal welfare organisations have been considered. A list was prioritised and narrowed by the Animal Welfare Committee comprising feasible options, and included variations that were considered controversial but that might provide further benefits in animal welfare.

5. The Options and Variations evaluated in terms of the indicative costs and benefits were:

- **Option A:** converting the proposed national standards into national voluntary guidelines (the minimum intervention option);
- **Option B:** the proposed national standards as currently drafted;
- **Option C:** one or more variations of the proposed national standards as follows:
 - *Variation C1:* All mulesing with pain relief
 - *Variation C2:* Restrict mulesing age to less than 6 months of age
 - *Variation C3:* Single penning for wool production ban
 - *Variation C4:* Tethering ban

- *Variation C5*: Mandate pain relief for laparoscopic LAI and ET
 - *Variation C6*: Require docked tails to have at least one free palpable joint.
6. Comparing the costs and benefits against the ‘base case’ is hindered by the inherent inability to quantify benefits to animal welfare. This is particular important for mulesing, tail docking and castration procedures, which may affect a large number of sheep. The three evaluation criteria used were:
- I.** Animal welfare benefits;
 - II.** Reduction in regulatory burden; and
 - III.** Net compliance costs to industry and government
7. The likely animal welfare benefits of the proposed national standards (Option B and Variations C1 to C6), whilst unquantifiable, are all likely to produce significant welfare improvements over the base case and Option A (voluntary guidelines in lieu of mandatory standards). Variation C6 would not provide any additional welfare benefit over Option B as there is no documented welfare difference in going from one to three palpable joints when tail docking.
8. As shown in Table 21 below, Option B and Variations C3, C4 and C6 would be likely to result in equal quantifiable and unquantifiable costs and benefits and the largest quantifiable net benefit over 10-years of all alternatives.
9. Variation C1 would be likely to provide significant unquantifiable welfare benefits over and above Option B and other Variations C2 to C6 – as it would affect an estimated 4.86 million lambs each year and would provide pain relief for the very invasive mulesing procedure. On the other hand, Variation C1 would entail the highest quantifiable costs (\$32.28 million over 10 years) of all the alternatives. In the case of variation C1, it would be misleading to focus on the quantifiable costs only, without better appreciation of the unquantifiable welfare benefits.

Table 21: Incremental 10-year costs and benefits of Options A and B and Variations C1 to C2 relative to the base case – 2012-13 dollars (\$m)

Option/Variation	I. Incremental Animal welfare benefits (unquantifiable)	Number of sheep affected under Criterion I	II. Reduction in regulatory burden (quantifiable)	II. Reduction in regulatory burden (unquantifiable)	III. Incremental compliance costs to sheep farmers (quantifiable)	Incremental Quantifiable net benefit
Option A (guidelines)	< B	A small undetermined % of 73.1m	\$0	< B	\$0	\$0
Option B (Proposed national standards)	> A	A larger undetermined % of 73.1m	\$2.66	> A	\$1.98	\$0.68
Variation C1 (All mulesing with pain relief)	> B	As with Option B + 4.86m	\$2.66	= B	\$32.28	-\$29.62
Variation C2 (Restriction of mulesing to less than 6 months of age)	> B	As with Option B + 30k	\$2.66	= B	\$3.54	-\$0.89
Variation C3 (Banning tethering)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68

Option/Variation	I. Incremental Animal welfare benefits (unquantifiable)	Number of sheep affected under Criterion I	II. Reduction in regulatory burden (quantifiable)	II. Reduction in regulatory burden (unquantifiable)	III. Incremental compliance costs to sheep farmers (quantifiable)	Incremental Quantifiable net benefit
Variation C4 (Banning of single pen shedding of sheep)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68
Variation C5 (All LAI and ET with pain relief)	> B	As with Option B +150k	\$2.66	= B	\$3.52	-\$0.87
Variation C6 (Requirement for one palpable joint)	= B	As with Option B	\$2.66	= B	\$1.98	\$0.68

10. There is no significant interdependency between the individual variations. However, if Variations C1 and C2 are adopted (both relate to mulesing), there is not likely to be a reduction in the total number of sheep mulesed to comply with the new standards. Tethering and single penning in sheds are not interchangeable practices and are done for very different reasons. It is believed that a restriction on one practice will not result in an increase in the other. However, it is feasible (for Ministers) to adopt a complementary combination of variations (C1 to C6) amongst those proposed or any additional variations that may be agreed to be analysed after the public consultation.
11. **The public consultation seeks the views and advice of interested parties in the further formulation of variations to the existing proposals. Selected additional variations may be investigated and reported in the decision RIS.**
12. The basis of the selection of the preferred option is the one that generates the greatest net benefit for the community. This step has been postponed awaiting response from public consultation on the appropriate combination of variations which would comprise Option C. There will then be a final cost/benefit comparison between Options A, B and C with a view to making a recommendation on a preferred option to SCoPI as part of the Decision RIS.
13. **The public consultation seeks the views and advice of interested parties in the further formulation of variations to the existing proposals, including better understanding of the impacts (costs and benefits).**

Glossary of terms and acronyms

ABS:	Australian Bureau of Statistics.
ABARE:	Australian Bureau of Agricultural and Resource Economics.
AHA:	Animal Health Australia.
Animal welfare:	the state of an animal and how well it is coping with the conditions in which it lives.
AVA:	Australian Veterinary Association.
Base case:	the situation that would exist if the proposed standards were not adopted.
Bleeding out:	loss of blood caused by cutting the major blood vessels, usually in the neck or at the base of the heart via the thoracic inlet.
Blunt trauma:	a single blow to the forehead causing immediate loss of consciousness.
Castration:	removal or disruption of the function of the testes by excision, or by constriction and/or crushing of testicular blood supply (rubber ring, tension band or burdizzo clamp).
Crutching:	Removal of wool from the hindquarters and tail of a sheep.
COAG:	Council of Australian Governments.
DAFF:	Australian Government Department of Agriculture, Fisheries and Forestry.
Economic efficiency:	when an output of goods and services is produced making the most efficient use of scarce resources and when that output best meets the needs and wants and consumers and is priced at a price that fairly reflects the value of resources used up in production.
Electro-immobilisation:	the use of pulsed, low-frequency electrical current to restrain an animal. The process produces tetanic contractions of skeletal muscles and therefore voluntary movement is not possible. The process does not produce pain relief.
Externality:	the cost or benefit related to a good or service that accrues to persons other than the buyer or the seller of that good or service.
Guidelines:	the recommended practices to achieve desirable animal welfare outcomes. The guidelines complement the standards. They should be used as guidance. Guidelines use the word 'should'. Non-compliance with one or more guidelines will not in itself constitute an offence under law. Compare with <i>Standards</i> .
EU:	European Union.
Heat stress:	when the response by animals to hot conditions above their thermo-neutral limit (heat load) exceeds the ability of their behavioural, physiological or psychological coping mechanisms.
Humane destruction:	the activity that results in immediate loss of consciousness and then death of the animal. The primary consideration is to prevent the animal from suffering further pain or distress.
Lamb marking:	A set of procedures commonly done at the same time. May include earmarking, ear tagging, vaccination, drenching, tail docking and castration of lambs.
Market:	an area of close competition between firms, or the field of rivalry in which firms operate.

Market failure:	the situation which occurs when freely functioning markets, operating without government intervention, fail to deliver an efficient or optimal allocation of resources.
Mulesing:	the removal of skin from the breech and/or tail of a sheep using mulesing shears.
OIE:	World Organisation for Animal Health.
Owner:	a person or company who owns livestock.
Pain relief:	the administration of drugs that reduce the intensity and duration of a pain response.
Person in charge:	the person who is responsible for the welfare of the livestock at a particular time. Responsibility for duty of care for livestock welfare may extend to the person's employer.
PIMC:	Primary Industries Ministerial Council, now known as the Standing Council on Primary Industries (SCoPI).
Prescribed:	specified by regulations made under an Act.
Pizzle dropping:	a surgical procedure performed on wether lambs and weaners where the skin between the prepuce and the abdomen is severed to allow the prepuce to hang below the wool on the belly region.
Producer:	a farmer of livestock.
Public good:	a good or service that will not be produced in private markets because there is no way for the producer to keep those who do not pay for the good or service from using it.
Restriction of competition:	something that prevents firms in a market or potential entrants to a market from undertaking the process of economic rivalry.
Risk assessment:	a logical and systematic process of establishing the context, identifying, analysing, evaluating, developing treatment strategies for, documenting and communicating risks associated with an activity, function or process.
Risk management:	a logical and systematic process of conducting a risk assessment, treating, monitoring and communicating risks associated with any activity, function or process in a way that will enable organisations to minimise losses and maximise opportunities.
RIS:	Regulation Impact Statement.
QA:	Quality Assurance.
RSPCA:	Royal Society for the Prevention of Cruelty to Animals.
SCoPI:	Standing Council on Primary Industries (SCoPI).
Sheep:	<i>Ovis aries</i> and other members of the genus <i>Ovis</i> .
Standards:	the acceptable animal welfare requirements designated in the proposed standards document. The requirements that must be met under law for livestock welfare purposes. The standards are intended to be clear, essential and verifiable statements; however, not all issues are able to be well defined by scientific research or are able to be quantified. Standards use the word 'must'.
Stress:	a response by animals that activates their behavioural, physiological or psychological coping mechanisms.
Tail docking:	the removal of a portion of a sheep's tail.
Weaning:	liquid feed is no longer provided to the lamb.
Wether:	a castrated male sheep.

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Appendices

1. Hourly Time cost for farm workers
2. Estimates of quantifiable costs and benefits of the proposed national standards (Option B)
3. Estimates of quantifiable costs of Variations C1 to C6
4. Details of relevant federal, state and territory legislation
5. List of proposed standards with negligible costs incremental to the base case
6. Number of sheep annually affected by welfare standards under Option B by State and territory
7. Complete list of public consultation questions.

Appendix 1 - Hourly time costs for farm workers

A primary resource requirement of activities undertaken in relation to sheep farming is labour time. The purpose of this appendix is to capture the dollar cost per hour of this resource and will be used in later appendices as relevant to estimate impacts of various standards with respect to time requirements on stakeholders.

A1.1 – Estimation of hourly time cost for farm workers

It is understood that the actual cost of time may vary between businesses, between individuals in a business and from day to day. However due to lack of specific data, time costs are estimated by taking average weekly earnings for ‘Farm, forestry and garden workers’¹²⁰, as shown in Table 1 column (a). Average weekly earnings are then annualised and converted to May 2012 values using an 8.35% growth in average wages between 2010 and 2012¹²¹ in column (c).

Table A1.1 – Estimated hourly charge out rate for farm workers by State and Territory – 2012-13¹²²

Jurisdiction	May 2010 Average weekly earnings (a)	May 2010 Annual earnings (b) = (a) x 52	May 2012 annual earnings (c) = (b) + [(b) *8.35%]	Projected on-cost multiplier (d)	Overhead cost multiplier (e)	No. weeks worked per annum (f)	No. hours worked per week (g)	Hrly Rate (h) = (c)/{(f)* (g)}*(d)* (e) ¹²³
NSW	\$843	\$43,836	\$47,496	1.19	1.5	44	38	\$51
VIC	\$971	\$50,492	\$54,708	1.17	1.5	44	38	\$57
QLD	\$851	\$44,252	\$47,947	1.15	1.5	44	38	\$49
SA	\$817	\$42,484	\$46,031	1.18	1.5	44	38	\$49
WA	\$922	\$47,944	\$51,947	1.18	1.5	44	38	\$55
TAS	\$1,091	\$56,732	\$61,469	1.18	1.5	44	38	\$65
NT	\$544	\$28,288	\$30,650	1.21	1.5	44	38	\$33
ACT	\$764	\$39,728	\$43,045	1.2	1.5	44	38	\$46

The projected on-cost multiplier in column (d) represents salary on-costs of superannuation, payroll tax, Fringe Benefits Tax (FBT) and workers compensation by state and territory. Leave loading is already incorporated in annual earnings in column (c). Each of the projected on-cost multipliers reflects the ratio of salary on-costs to total earnings within the state and territory as noted in 2002-03¹²⁴. Projection is based on the annual increase of this ratio between 1993-94 and 2002-03, which varies for each of the states and territories. Other salary related on-costs are considered in column (f) – the number of weeks worked per annum (44), which takes account of an average of two weeks of sick leave and two weeks of public holidays plus four weeks of annual leave. The 38-hour working week [column (g)], is based on the guarantee of maximum ordinary hours in the Australian Government Workplace Relations Act.

The overhead cost multiplier in column (e) incorporates non-salary related costs such as a vehicle and computer. This multiplier is based on a guidance note from the Victorian Competition and Efficiency commission, which states,

¹²⁰ ABS (2011) – Employee Earnings and Hours, Australia, Cat. 6306.0, Table 1a, Average weekly cash earnings and hours paid for, full-time non-managerial adult employees, Australia–Detailed occupation (ANZSCO)

¹²¹ ABS (2012) – Average Weekly Earnings, Australia, Cat. 6302.0

¹²² All figures have been rounded to whole numbers for ease of presentation

¹²³ Rounded to the nearest whole number.

¹²⁴ ABS (2003) – Labour Costs, Australia 2002-03, Table 1a. Major Labour Costs, State/Territory, Cat. 6348.0.55.001

The Australian Vice-Chancellor's Committee guidance to universities on bidding for research funding suggests multipliers of 1.52 for on-costs and 1.4 for non-laboratory infrastructure costs (excluding other direct, non-salary costs). This suggests that an overhead multiplier of at least 1.5 may be appropriate.¹²⁵

The hourly charge out rate is then calculated by dividing annual earnings by the product of the number of weeks worked and hours per week and then multiplying this by the overhead cost and on-cost multipliers:

$$\text{Hourly charge out rate} = \text{annual earnings} / (\text{working weeks} \times \text{hours per week}) \times \text{on-cost multiplier} \times \text{overhead cost multiplier}$$

¹²⁵Victorian Competition and Efficiency Commission 2006, *Guidance Note on Suggested Default Methodology and Values for Staff Time in BIA/RIS Analysis*, Melbourne, p.3.

Appendix 2 – Estimates of Quantifiable costs and savings (benefits) of the proposed standards – Option B

The purpose of this Appendix is to establish the quantifiable costs and benefits of the proposed Australian Animal Welfare Standards and Guidelines - Sheep ('the proposed standards'). This includes only those proposed standards with estimated costs that are incremental to the base case. That is, proposed standards with costs assessed to be not greater than the base case are not estimated here. Moreover, jurisdictions have proposed no incremental allocation of resources towards enforcement and therefore no additional cost in relation to enforcement with regards to the proposed standards is identified.

A2.1 proposed standard 5.2 – Muzzling of dogs

According to proposed standard 5.4, a person in charge of a dog that habitually bites sheep must muzzle the dog while working sheep. The number of dogs that bite is assumed as 1 per establishment (on average) involved in sheep farming¹²⁶. The number of sheep farms per state and territory is summarised in Table A2.1 and is estimated to be around 43,828 across Australia.

Table A2.1 –Population statistics with respect to sheep farming by state and territory - 2010-11

Jurisdiction	No. farms [^] (i)	Employees (j) = (i)/43,828*2 3,352 ^{^^}	Sheep numbers [^] (k)	Breeding ewes 1 year and over [^] (l)	Lamb numbers [^] (m)
NSW	16,416	8,747	26,824,697	15,418,723	12,208,426
VIC	10,970	5,845	15,212,015	8,640,841	7,107,956
QLD	1,819	969	3,653,239	1,963,563	1,196,502
SA	6,813	3,630	11,008,541	6,133,230	5,111,474
WA	6,223	3,316	13,999,854	8,334,526	6,546,000
TAS	1,552	827	2,344,469	1,301,896	1,097,709
NT	3	2	1,855	269	-
ACT	32	17	54,092	28,733	21,197
AUSTRALIA	43,828	23,352	73,098,762	41,821,781	33,289,264

[^] Source: ABS (2012) – *Agricultural Commodities by State & Territory*

^{^^} Source: <http://www.ibisworld.com.au/industry/default.aspx?indid=16> (accessed 13 December 2012)

Furthermore, it is assumed for the purpose of estimation that the proportion of dogs currently muzzled either because they are prone to biting or because of market forces¹²⁷, is currently 95%. Incremental costs are assumed to be around \$30¹²⁸ per muzzle per dog. Also muzzles are assumed to be purchased only once and reused from dog to dog. However, this may be an underestimate, as some sheep dogs may need to have their muzzles replaced over their lifetimes.

As shown in Table A2.2, the one-off cost of muzzling dogs under proposed standard 5.2, is estimated to be approximately **\$65,742** in 2014-15 or **\$57,422** in 2012-13 present value dollars.

¹²⁶ On advice from AHA

¹²⁷ It is in the interest of a farmer to ensure that the hides of sheep are not marked, as this would reduce the future sale value of a lamb/sheep.

¹²⁸ Online price survey for durable wire muzzles suitable for Australian sheep dogs - prices range from \$20 to \$40 - based on size - assume average cost (see http://www.myshopping.com.au/ZM--717820982_Pet_Supplies)

Table A2.2 – One-off incremental cost of muzzles for sheep dogs as required under standard 5.2 – 2012-13 dollars

Jurisdiction	No. sheep dogs affected (i)	% not muzzled (n)=(i)*5%	Muzzle cost per dog (o)	One-off cost (p)= (o)*(n)
NSW	16,416	821	\$30	\$24,624
VIC	10,970	549	\$30	\$16,455
QLD	1,819	91	\$30	\$2,729
SA	6,813	341	\$30	\$10,220
WA	6,223	311	\$30	\$9,335
TAS	1,552	78	\$30	\$2,328
NT	3	0	\$30	\$5
ACT	32	2	\$30	\$48
Australia	43,828	2191	\$30	\$65,742
<i>Present value 7% discount rate</i>				\$57,422
3% discount rate				\$61,968
10% discount rate				\$54,332

A2.2 proposed standard 5.7 – Exercise of tethered sheep

According to proposed standard 5.7, a person in charge must ensure sheep that are tethered are able to exercise daily. The main resource cost of this standard would be the time required to ensure that exercising is undertaken daily for sheep. Hourly charge out rates for each state and territory are established in Appendix 1 (see column (h) in Table A1.1). Moreover, for the purpose of estimation, the amount of time required per day to exercise permanently tethered sheep would be 10 minutes per animal, even if the exercise is off-leash as some oversight would be required to prevent damage to house paddocks. Based on advice from AWC the estimated number of sheep permanently tethered by state or territory is summarised in Table A2.3. As shown in Table A2.3, the 10-year cost of exercising permanently tethered sheep under proposed standard 5.7 is estimated to be approximately \$39.23m or \$25.75m in 2012-13 present value dollars.

Table A2.3 – 10-year incremental cost of exercising permanently tethered sheep under standard 5.7 – 2012-13 dollars

Jurisdiction	No. sheep permanently tethered (q)	Hourly charge out rates (h) ¹²⁹	Annual cost of exercise (r) = (q)*(h)*0.167hrs*365 days	10-year cost (s) = (r)*10
NSW	1,000	\$51	\$3,084,632	\$30,846,323
VIC	50	\$57	\$174,664	\$1,746,642
QLD	50	\$49	\$150,462	\$1,504,618
SA	50	\$49	\$148,219	\$1,482,187
WA	50	\$55	\$167,268	\$1,672,676
TAS	50	\$65	\$197,927	\$1,979,273
NT	-	\$33	\$0	\$0
ACT	-	\$46	\$0	\$0
Australia	1,250		\$3,923,172	\$39,231,718
<i>Present value 7% discount rate</i>				\$25,752,072
3% discount rate				\$32,490,729
10% discount rate				\$21,914,720

¹²⁹ See Table A1.1 for the source of estimates

As shown in Table A2.3, it is expected that the annual cost of exercising sheep would be between a minimum of \$2,964.37 in SA and a maximum of \$3,958.55 in TAS. This is a high incremental cost averaging around \$25,000 over 10 years and unlikely to be incurred by a person in charge given that the value of a sheep is \$80.

If the person in charge decided to avoid the cost of exercising sheep, there would be two practical alternatives. The first alternative would be to get rid of the sheep and incur a lawn moving cost of \$25 per standard lawn once every 3 weeks (i.e. 17 times a year). The cost of mowing lawns would therefore be equivalent to \$425 per annum. However, it is understood that these sheep are not maintained in a commercial sense and that simply getting rid of sheep does not consider their sentimental value to the person in charge.

Secondly, the person in charge may decide to avoid the cost of exercising sheep by erecting a fence and providing a companion sheep to allow for the better management of untethered sheep. The cost of fencing is estimated using the following assumptions:

- 8 sheep per hectare or 0.25 hectare for every 2 sheep;
- 0.25 hectare is 2,500 square metres or 200 metres of fencing;
- One-off standard sheep fence cost of \$7 per metre including labour and materials¹³⁰;
- One-off purchase cost of sheep of \$80.

For every currently tethered sheep there will be a one-off cost of \$1,480 incurred in the first year of the proposed standard.

$$\text{Cost of sheep } (\$80) + \text{cost of fence } (200 \text{ metres} \times \$7 \text{ per metre}) = \$1,480$$

As shown in Table A2.4, the 10-year cost of providing for fencing and an additional sheep for currently permanently tethered sheep under proposed standard 5.7 is estimated to be approximately **\$1.85m** or **\$1.62m** in 2012-13 present value dollars.

Table A2.4 – 10-year incremental cost of fencing and additional sheep for currently permanently tethered sheep under standard 5.7 –2012-13 dollars

Jurisdiction	No. of sheep permanently tethered (q')	10-year one-off cost (r') = (q')*\$1,480
NSW	1,000	\$1,480,000
VIC	50	\$74,000
QLD	50	\$74,000
SA	50	\$74,000
WA	50	\$74,000
TAS	50	\$74,000
NT	-	\$0
ACT	-	\$0
Australia	1,250	\$1,850,000
Present value 7% discount rate		\$1,615,862
3% discount rate		\$1,743,802
10% discount rate		\$1,528,926

¹³⁰ http://www.weeklytimesnow.com.au/article/2011/01/31/289045_on-farm.html (accessed 2 January 2013)

A2.3 Proposed standard 6.1 – On-the job training requirement

According to proposed standard 6.1, a person performing tail docking or castration must have the relevant knowledge, experience and skills or be under the direct supervision of a person who has the relevant knowledge experience and skills.

The implication of this is that there would be additional training costs in all states. According to AHA, the cost of training is likely to be minor as it is envisaged that this will be provided by the operator of the sheep farm in the form of on-the-job training, estimated to take 30 minutes per new starter. This is mainly envisaged as a defensive standard with minimal cost impact.

It is noted that a total of 23,352¹³¹ individuals (i.e. farmhands) are employed in sheep farming. Of this amount it is assumed that there would be 10% turnover in the industry and that 30% would need to receive on-the-job training for tail docking or castration given that these are specialised tasks in the industry. It is also assumed that the turnover in the number of sheep farmhands would be constant and stable over 10 years, and so the number of those needing training (i.e. 10% or in other words approximately 2,335 farmhands per annum) would also be stable.

As shown in Table A2.4, this would mean that approximately 701 new starters would require on-the-job training per year.

The total 10-year incremental training cost is estimated to be approximately **\$0.19m** or **\$0.12m** in 2012-13 present value dollars, as shown in Table A2.5.

Table A2.5 – 10-year incremental training cost of sheep farmhands by state and territory under standard 6.1 –2012-13 dollars

Jurisdiction	No. Farmhands requiring training (t)=(j) ¹³² *10%*30 %	Hourly cost (h) ¹³³	Training cost (u)=(t)*(h)	10-year cost (v) = (u)*10
NSW	262	\$51	\$6,653	\$66,526
VIC	175	\$57	\$5,035	\$50,346
QLD	29	\$49	\$719	\$7,191
SA	109	\$49	\$2,653	\$26,533
WA	99	\$55	\$2,735	\$27,350
TAS	25	\$65	\$807	\$8,071
NT	0	\$33	\$1	\$8
ACT	1	\$46	\$12	\$119
Australia	701		\$18,615	\$186,145
Present value 7% discount rate				\$122,187
3% discount rate				\$154,161
10% discount rate				\$103,980

A2.4 Proposed standard 6.3 – Requirement for two free palpable joints in tails – reduction in regulatory burden

Under proposed standard 6.3, a person in charge must not dock a tail to less than two free palpable joints. This is a new standard that does not exist in the existing MCOP but it is expected to have a negligible cost impact.

¹³¹ See: <<http://www.ibisworld.com.au/industry/default.aspx?indid=17>> (accessed 1 October 2012)

¹³² See Table A2.1 for source of estimates

¹³³ See Table A1.1 in Appendix 1 for source of estimates

The expected welfare benefit would be significant but difficult to quantify as the number of sheep that would then be left with a longer, more functional tail is not known. The number is expected to be a large number of the estimated 33M sheep that are docked each year. The operational costs to sheep farmers are expected to be negligible.

The immediate value in this proposed standard for industry and Australia is the ability to clearly communicate that Australia does not allow unacceptably short tail lengths for the benefit of domestic and international markets. It removes this risk to Australia's international reputation and also uncertainty for industry.

This standard would be effective in promoting national consistency in relation to tail docking. This would reduce the unquantifiable regulatory burden in relation to this matter for businesses operating across multiple jurisdictions and which currently have different approaches to these matters.

A2.5 Proposed standard 6.4 – Requirement for pain relief under castration – reduction in regulatory burden

Under proposed standard 6.4, a person in charge must not castrate sheep over 6 months old without pain relief. This proposed standard would create national consistency with respect to castration and would lead to lower transaction costs in the economy as a whole, as well to savings for individual businesses operating across jurisdictional boundaries.¹³⁴ Businesses in VIC that would otherwise need to employ the supervision of a veterinarian to perform castration under the base case would no longer be required to do so and could use a contractor (see discussion of inconsistency in Part 2.1.4). There are 1,777¹³⁵ male lambs over 6 months castrated in VIC every year (see Table 4 in this RIS). The time cost difference between a veterinarian and a contractor in administering Xylazine 20 and Lignocaine would be \$1.67¹³⁶ and \$2.33¹³⁷ per lamb, respectively. The total time cost savings of administering pain relief would be \$4.00 per lamb and given that there are 1,777 male lambs per annum this would bring the reduction in regulatory burden over 10 years to **\$71,080** or **\$46,657** in 2012-13 dollars.

A2.5 Proposed standard 7.1 – Requirement for knowledge, experience and skills or be under direct supervision when performing mulesing – reduction in regulatory burden

According to proposed standard 7.1, a person performing mulesing must have the relevant knowledge, experience, and skill or be under the direct supervision of a person who has the relevant knowledge, experience and skills.

This proposed standard would result in a *cost savings and a reduction in regulatory burden* for new starters in sheep farming and is estimated by taking the difference in the cost of formal training and on-the-job training *both assumed to require a day in terms of time resource required*. The difference therefore, would be the cost of formal training in a course estimated to be around \$600 for a full day¹³⁸ and cost of travel out around \$0.74 per km. Assuming total travel of 100km in 1hr, this would bring the average transport cost to \$74. The transport and course fee costs saved would therefore be equal to an estimated \$674 per trainee.

¹³⁴ TU Dresden and Fraunhofer Institute, 2000.

¹³⁵ Equal to 3,553,978 castrated male lambs with 0.05% castrated over 6 months based on advice from AHA

¹³⁶ Based on a time cost of 30 seconds at \$140 = difference between contractor rate of \$80 and veterinarian rate of \$220

¹³⁷ Based on a time cost of 60 seconds at \$140 = difference between contractor rate of \$80 and veterinarian rate of \$220

¹³⁸ National Mulesing Training Course delivered by the Livestock Contractors Association

The number of trainees that would save on course fees and travel costs is estimated by firstly determining the prevalence of mulesing in the industry. Tables A2.6 and A2.7 illustrate the number of farms and employees involved with merino lambs and ‘other’ lambs, respectively.

Table A2.6 – Estimated number farms and employees involved with mulesing activity – merino lambs

Jurisdiction	Farms marking merino lambs [^] (c1)	% mulesing merino lambs ^{^^} (d1)	Est. no. farms mulesing merino lambs (e1) = (c1)*(d1)	No. of employees with farms mulesing ‘merino lambs’ (f1) = 9,965/23,352*(e1)	Est. annual turnover of employees in merino lamb farms (g1) = (f1)*10%
NSW	6,145	65%	3,994	1,704	170
VIC	3,231	59%	1,906	813	81
QLD	617	58%	358	153	15
SA	2,907	53%	1,541	657	66
WA	3,290	58%	1,908	814	81
TAS	414	59%	244	104	10
NT	0	0%	0	0	0
ACT	20	65%	13	6	1
AUSTRALIA	16,624		9,965	4,252	425

[^] Source: ABS (2011) – *Agricultural Commodities by State & Territory* - Cat. No. 7121.0 2010-11

^{^^} Source: Jones, A and Curnow, M (May 2012), *Sheep CRC: National Farmer Survey Results 2011*, Australian Government

Table A2.7 – Estimated number of farms and employees involved with mulesing activity ‘other’ lambs

Jurisdiction	Farms marking “other” lambs [^] (h1)	% mulesing meat lambs ^{^^} (i1)	Est. no. farms mulesing ‘other’ lambs (j1) = (h1)*(i1)	No. of employees with farms mulesing ‘other’ lambs (k1) = 3,853/23,352*(j1)	Est. annual turnover of employees in “other” lamb farms (l1) = (k1)*10%
NSW	11,330	13%	1,473	629	63
VIC	8,085	14%	1,132	483	48
QLD	903	7%	63	27	3
SA	4,480	17%	762	325	32
WA	3,748	7%	262	112	11
TAS	1,130	14%	158	68	7
NT	0	0%	0	0	0
ACT	23	13%	3	1	0
AUSTRALIA	29,699		3,853	1,644	164

[^] Source: ABS (2011) – *Agricultural Commodities by State & Territory* - Cat. No. 7121.0 2010-11

^{^^} Source: Jones, A and Curnow, M (May 2012), *Sheep CRC: National Farmer Survey Results 2011*, Australian Government

The incremental 10-year benefit (reduction in regulatory burden) of not requiring formal training and accreditation under proposed standard 7.1 is estimated to be **\$4m** or **\$2.61m** in 2012-13 present value dollars, as shown in Table A2.8.

Table A2.8 – 10-year incremental benefit (reduction in regulatory burden) for training requirements by state and territory under proposed standard 7.1 –2012-13 dollars

Jurisdiction	No. Employees needing training in mulesing per annum (m1) = (l1) + (g1)	Annual cost savings (n1)	10-year cost savings (o1) = (m1)*(n1)
NSW	233	\$157,237	\$1,572,372
VIC	130	\$87,379	\$873,795
QLD	18	\$12,110	\$121,101
SA	98	\$66,215	\$662,153
WA	93	\$62,426	\$624,261
TAS	17	\$11,575	\$115,749
NT	-	\$0	\$0
ACT	1	\$460	\$4,599
Australia	590	\$397,403	\$3,974,029
<i>Present value 7% discount rate</i>			\$2,608,591
3% discount rate			\$3,291,192
10% discount rate			\$2,219,881

A2.7 proposed standard 9.4 – Requirement for adequately cleaning sheep pens

According to proposed standard 9.4, a person in charge must not allow faeces and urine to accumulate to the stage that it compromises the welfare of a sheep in an intensive production system.

According to the Australian Superfine Wool Growers Association there are 5 group pen shed enterprises with an estimated total of around 5,000 head of sheep¹³⁹. Taking the average number of sheep per pen to be 5¹⁴⁰ – then this would entail roughly 1,000 pens. However, of these, it is noted that only 1%¹⁴¹ of pens would not adequately be cleaned under proposed standard 9.4. It is believed that there are two sheds in NSW and Vic respectively, and a single shed in SA.

The cost of cleaning sheds using a scoop and shovel is assumed to involve two hours of labour time per shed and once a week. Over 10 years this would be equal to **\$0.28m**. In present value dollars this would equal **\$0.18m**.

Table A2.9 – 10-year incremental cost of requirement for adequately cleaning sheep pens by state and territory under proposed standard 9.4 –2012-13 dollars

Jurisdiction	Current no. of inadequately cleaned sheds (w)	Annual cost (x) = (w)*(h) ¹⁴² *2hrs/week *52 weeks	10-year cost (y) = (x)*10
NSW	2	\$10,547	\$105,469
VIC	2	\$11,944	\$119,442
QLD	-	\$0	\$0
SA	1	\$5,068	\$50,679
WA	-	\$0	\$0
TAS	-	\$0	\$0
NT	-	\$0	\$0
ACT	-	\$0	\$0

¹³⁹ Based on advice from AHA

¹⁴⁰ AHA notes that 4 to 6 sheep would typically be housed in one pen.

¹⁴¹ Based on advice from AHA

¹⁴² See Table A1.1 for source of estimates

Jurisdiction	Current no. of inadequately cleaned sheds (w)	Annual cost (x) = (w)*(h) ¹⁴² *2hrs/week *52 weeks	10-year cost (y) = (x)*10
Australia	5	\$27,559	\$275,589
Present value 7% discount rate			\$180,899
3% discount rate			\$228,236
10% discount rate			\$153,943

A2.8 Summary of 10-year quantifiable costs of the proposed standards – Option B

A summary of 10-year quantifiable costs of the proposed standards under Option B is summarised in Table A2.10. The total 10-year net incremental quantifiable cost is estimated to be **\$2.38m** or **\$1.98m** in present value dollars using a 7% discount rate.

Table A2.10 – Summary of quantifiable 10-year incremental cost of proposed standards under Option B –2012-13 dollars

Proposed standard	10-year cost	PV cost - 7% discount rate	PV cost - 3% discount rate	PV cost - 10% discount rate
5.2	\$65,742	\$57,422	\$61,968	\$54,332
5.7	\$1,850,000	\$1,615,862	\$1,743,802	\$1,528,926
6.1	\$186,145	\$122,187	\$154,161	\$103,980
9.4	\$275,589	\$180,899	\$228,236	\$153,943
Total	\$2,377,476	\$1,976,370	\$2,188,167	\$1,841,181

A summary of 10-year quantifiable costs of the proposed standards by state and territory under Option B in 2012-13 present value dollars (using a 7% discount rate) by state and territory is summarised in Table A2.11.

Table A2.11 – Summary of quantifiable 10-year incremental cost of proposed standards under Option B by state and territory – 2012-13 dollars

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403		\$33,266					\$180,899
Total	\$1,427,096	\$190,457	\$71,738	\$124,243	\$90,741	\$71,966	\$9	\$120	\$1,976,370

A2.9 Summary of 10-year quantifiable benefits of the proposed standards – Option B

A summary of 10-year quantifiable benefits of the proposed standards by state and territory under Option B in 2012-13 present value dollars (using a 7% discount rate) by state and territory is summarised in Table A2.12 and given as **\$2.66m** over 10-years.

Table A2.12 – Summary of quantifiable 10-year incremental benefit of proposed standards under Option B by state and territory – 2012-13 dollars¹⁴³

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
6.4	-	\$46,657	-	-	-	-	-	-	\$46,657
7.1	\$1,032,120	\$573,567	\$79,492	\$434,643	\$409,771	\$75,979	\$0	\$3,019	\$2,608,591
Total	\$1,032,120	\$620,224	\$79,492	\$434,643	\$409,771	\$75,979	\$0	\$3,019	\$2,655,248

Taking the total 10-year incremental benefit of the proposed standards (in Table A2.12) and subtracting the cost of the proposed standards (in Table A2.11) and then dividing by the total flock of sheep in each state or territory (in Table A2.1) – gives the average net impact per sheep ranging from a savings of \$0.05 per sheep in the ACT to a cost of \$0.01 per sheep in NSW, as shown in Table A2.13.

Table A2.13 – Average net 10-year impact per sheep as a result of the proposed standards under Option B by state and territory –2012-13 dollars

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost of proposed standards	\$394,976	-\$429,767	-\$7,754	-\$310,400	-\$319,030	-\$4,013	\$9	-\$2,899	-\$632,221
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.01	-\$0.03	-\$0.00	-\$0.03	-\$0.02	-\$0.00	\$0.00	-\$0.05	-\$0.01

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

¹⁴³ See Table A2.8 and part A2.4 for source of estimates for proposed standard 7.1 and 6.4, respectively

Appendix 3 – Estimates of Quantifiable costs – Variations C1, C2, C3, C4, C5 and C6

The purpose of this appendix is to estimate the quantifiable costs of Variations C1 to C6 to the proposed standards under Option B. It is not proposed that a variation or combination of variations would become a possible option/alternative to Option B under Option C at this time. These variations are estimated in the following sections.

A3.1 Incremental cost of pain relief for all mulesing – Variation C1

Variation C1 would provide a variation to proposed standard 7.3 and would require pain relief for *all mulesing* and not just for sheep that are six months to 12 months of age. Recent scientific research has examined strategies for pain relief for mulesing and the effectiveness of these approaches.

The first paper, published was by Paull *et al* 2007, concluded that the topical anaesthetic formulation applied immediately after the mulesing cut provided some benefits, but that a combination of non-steroidal anti-inflammatory drug (Carprofen) and topical anaesthetic would be required for full and pain relief.

A subsequent study was published by Lomax *et al* 2008 showed that the application of the topical anaesthetic significantly reduced the sheep responses to wound touching and also reduced behaviour scores in mulesed sheep in the four to eight hours after mulesing. They also showed that the mulesed sheep treated with the topical anaesthetic did not differ in their behaviour scores from unmulesed lambs.

Paull *et al* 2008 concluded that a combination of short- and long-acting pain relief drugs may be needed to provide more complete pain relief. The administration of some NSAIDs offers the potential for good analgesia in sheep for the inflammatory phase following the tissue trauma of surgical husbandry procedures. Other pain relief options need to be considered if the acute stress response to the procedure is to be reduced.

Taken together, these studies suggest that it is possible to achieve pain relief in conjunction with mulesing, but this would be most effectively be achieved through a combination of approaches such as the pre-mulesing administration of systemic pain relief followed by a post-mulesing application of topical anaesthetic.

However, given there are no non-steroidal anti-inflammatory drugs that are currently registered for sheep in Australia; pain relief is recommended in the form of topical anaesthetic post-cut. Current pain relief products that could be used in conjunction with mulesing are only available through a veterinarian. The most widely used product is Tri-Solfen, which is available as an S4 product.

The cost of pain relief would be 8 mls per lamb at a cost of \$0.10 per ml (i.e. \$0.80 per lamb) and a time cost of \$0.10 cents per lamb to apply. Disposables cost would be \$0.05 per lamb. Therefore, the total cost of applying anaesthetic would be \$0.80 plus \$0.05 disposal cost plus time cost of \$0.10 per lamb = ***\$0.95 per lamb***.

Table A3.1 shows the proportion of mulesed lambs and the proportion mulesed without pain relief by sire type and jurisdiction for 2010.

Table A3.1 the proportion of lambs mulesed and the proportion of those mulesed without pain relief by sire type and jurisdiction - 2010

Jurisdiction	% mulesed of Merino lambs (p1)	% mulesed without pain relief (of those mulesed) (q1)	% mulesed of meat lambs (r1)	% mulesed without pain relief (of those mulesed) (s1)
NSW	64%	30%	9%	51%
VIC	79%	25%	9%	43%
QLD	30%	100%	25%	100%
SA	88%	25%	24%	65%
WA	89%	42%	8%	67%
TAS	40%	71%	14%	62%

Source: Jones, A and Curnow, M (May 2012), *Sheep CRC: National Farmer Survey Results 2011*, Australian Government

Using the estimates in Table A3.1, the following number of mulesed lambs that would require pain relief under Variation C1, are provided in Table A3.2 by jurisdiction and sire type.

Table A3.2 – Estimated number of lambs mulesed without pain relief by sire type and jurisdiction - 2010

Jurisdiction	Merino lambs [^] (t1)	No. Merino lambs mulesed (u1) = (t1)*(p1) ¹⁴⁴	No. Merino lambs mulesed without pain relief (v1) = (u1)*(q1) ¹⁴⁵	Other lambs [^] (w1)	No. other lambs mulesed (x1) = (w1)*(r1) ¹⁴⁶	No. other lambs mulesed without pain relief (y1) = (x1)*(s1) ¹⁴⁷	Total number of lambs mulesed without pain relief (z1) = (v1)+(y1)
NSW	4,962,595	3,176,061	952,818	7,245,831	652,125	332,584	1,285,402
VIC	1,958,054	1,546,863	386,716	5,149,902	463,491	199,301	586,017
QLD	789,880	236,964	236,964	406,622	101,656	101,656	338,620
SA	2,138,822	1,882,163	470,541	2,972,653	713,437	463,734	934,275
WA	3,705,319	3,297,734	1,385,048	2,840,681	227,254	152,261	1,537,309
TAS	421,307	168,523	119,651	676,401	94,696	58,712	178,363
AUSTRALIA	13,991,112	10,308,308	3,551,738	19,298,151	2,252,659	1,308,246	4,859,985

[^] Source: ABS (2011) – *Agricultural Commodities by State & Territory* - Cat. No. 7121.0 2010-11

The incremental 10-year cost of requiring pain relief for all mulesing is estimated to be **\$46.17m** or **\$30.31m** in 2012-13 present value dollars, as shown in Table A3.3.

Table A3.3 – 10-year incremental cost of requiring pain relief for all mulesing by state and territory under Variation C1 –2012-13 dollars

Jurisdiction	Lambs affected (z1) ¹⁴⁸	Annual cost of pain relief (a2)=(z1)*\$0.95	10-year cost (b2) = (a2)*10
NSW	1,285,402	\$1,221,132	\$12,211,318
VIC	586,017	\$556,716	\$5,567,160
QLD	338,620	\$321,689	\$3,216,885

¹⁴⁴ See Table A3.1 for source of estimates

¹⁴⁵ See Table A3.1 for source of estimates

¹⁴⁶ See Table A3.1 for source of estimates

¹⁴⁷ See Table A3.1 for source of estimates

¹⁴⁸ See Table A3.2 for source of estimates

Jurisdiction	Lambs affected (z1) ¹⁴⁸	Annual cost of pain relief (a2)=(z1)*\$0.95	10-year cost (b2) = (a2)*10
SA	934,275	\$887,561	\$8,875,610
WA	1,537,309	\$1,460,443	\$14,604,433
TAS	178,363	\$169,445	\$1,694,447
NT	-	\$0	\$0
ACT	-	\$0	\$0
Australia	4,859,985	\$4,616,985	\$46,169,853
<i>Present value 7% discount rate</i>			\$30,306,329
3% discount rate			\$38,236,719
10% discount rate			\$25,790,342

A3.1.1 Incremental cost of Variation C1 from the base case

The total 10-year incremental cost of all standards under Variation C1 as compared to the base case would be approximately **\$48.54m** or **\$32.28m** in 2012-13 dollars using a 7% discount rate, as shown in Table A3.4.

Table A3.4 – Summary of quantifiable 10-year incremental cost of proposed standards under variation C1 – 2012-13 dollars

Proposed standard	10-year cost	PV cost - 7% discount rate	PV cost - 3% discount rate	PV cost - 10% discount rate
5.2	\$65,742	\$57,422	\$61,968	\$54,332
5.7	\$1,850,000	\$1,615,862	\$1,743,802	\$1,528,926
6.1	\$186,145	\$122,187	\$154,161	\$103,980
9.4	\$263,902	\$173,228	\$218,557	\$147,415
Pain relief all mulesing (variation on proposed standard 7.3)	\$46,169,853	\$30,306,329	\$38,236,719	\$25,790,342
Total	\$48,535,641	\$32,275,028	\$40,415,207	\$27,624,994

A summary of 10-year quantifiable costs of the proposed standards by state and territory under Variation C1 in 2012-13 present value dollars by state and territory is summarised in Table A3.5.

Table A3.5 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C1 by state and territory – 2012-13 dollars

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403	\$0	\$33,266	\$0	\$0	\$0	\$0	\$173,228
Pain relief all mulesing (Variation on proposed standard 7.3)	\$8,015,625	\$3,654,337	\$2,111,594	\$5,826,034	\$9,586,488	\$1,112,251	\$0	\$0	\$30,306,329
Total	\$9,442,721	\$3,844,794	\$2,183,332	\$5,950,278	\$9,677,229	\$1,184,217	\$9	\$120	\$32,275,028

Taking the total 10-year incremental cost of the standards (in Table A3.5) and subtracting the benefit of the standards (in Table A2.12 of Appendix 2) and then dividing by the total flock of sheep in each state or territory (in Table A2.1 of Appendix 2) – gives the net impact per sheep ranging from a cost savings of \$0.05 in the ACT to a cost of \$0.66 in WA, as shown in Table A3.6.

Table A3.6 – Average net 10-year impact per sheep as a result of the proposed standards under Variation C1 by state and territory –2012-13 dollars

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost	\$8,410,601	\$3,224,569	\$2,103,840	\$5,515,634	\$9,267,458	\$1,108,238	\$9	-\$2,899	\$29,619,780
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.31	\$0.21	\$0.58	\$0.50	\$0.66	\$0.47	\$0.00	-\$0.05	\$0.41

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

A3.1.2 Incremental cost of Variation C1 from Option B

The total 10-year incremental cost all standards under Variation C1 as compared to Option B (i.e. pain relief for all mulesing under Variation C1) would be approximately **\$46.17m** or **\$30.31** in 2012-13 dollars. This is summarised in Table A3.7 by state or territory and estimates are taken from Table A3.3. The main impact of going to Variation C1 as compared with Option B would be on WA followed by NSW and SA.

Table A3.7 – 10-year incremental cost of Variation C1 as compared to Option B by state and territory –2012-13 dollars

Going from Option B to Variation C1	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
<i>Plus</i> pain relief for all mulesing (Variation on proposed standard 7.3)	\$8,015,625	\$3,654,337	\$2,111,594	\$5,826,034	\$9,586,488	\$1,112,251	\$0	\$0	\$30,306,329
Net Difference between Option B and Variation C1	\$8,015,625	\$3,654,337	\$2,111,594	\$5,826,034	\$9,586,488	\$1,112,251	\$0	\$0	\$30,306,329

A3.2 Incremental cost of restricting mulesing age to less than 6 months of age – Variation C2

Variation C2 would involve restricting the mulesing age to less than 6 months of age and this provides a variation to proposed standard 7.2 (which allows mulesing between 24hrs old and 12 months old). As with other similar husbandry procedures, upper age limits are appropriate for mulesing in order to optimise sheep welfare. When mulesing is done it is common practice to do this at marking to avoid extra mustering and handling but there can be valid reasons why it is not done in that time frame. Six months is a generally suitable age limit in Australia to accommodate all production systems.

Based on advice from AHA it is estimated that there are 30,000 lambs across Australia, which are mulesed beyond 6 months of age per year. A pro-rata estimate is provided for each jurisdiction

based on the prevalence of mulesing in that state for the purpose of estimation. The number of lambs that are mulesed beyond 6 months of age is illustrated in Table A3.8 by jurisdiction.

Table A3.8 – Estimated number of lambs mulesed over the age of 6 months by jurisdiction – 2010

Jurisdiction	No. Merino and other lambs mulesed (c2) = (u1)+(x1)	No. lambs mulesed > 6 months of age (d2) = 30,000/12,560,966*(c2)
NSW	3,828,186	9,143
VIC	2,010,354	4,801
QLD	338,620	809
SA	2,595,600	6,199
WA	3,524,988	8,419
TAS	263,219	629
AUSTRALIA	12,560,966	30,000

The main reason why mulesing may be delayed for these 30,000 animals is due to poor pastoral conditions during drought or heavy parasite or insect burdens. Mulesing is a major procedure and animals that are mulesed under conditions of poor feed are likely to achieve lower weight gain, longer time for achieving marketable conditions; a break in the wool (resulting in reduced wool value); and mortality estimated to be for around 10% of animals affected.

Under Variation C2, the restriction of mulesing to less than 6 months of age for around 30,000 animals is likely to result in the above costs. However, it is unknown what the incidence of lower weight gain, delayed marketable conditions, and reduced wool value might be. Therefore, the estimation of costs for this variation is based on mortality with the replacement cost of a lamb assumed to be \$80.

The incremental 10-year cost savings of restricting mulesing to less than 6 months of age is estimated to be **\$2.4m** or **\$1.58m** in 2012-13 present value dollars, as shown in Table A3.9.

Table A3.9 – 10-year incremental cost of restricting mulesing to less than 6 months of age by state and territory under Variation C2 –2012-13 dollars

Jurisdiction	No. Lambs affected by mortality due to pre mature mulesing in drought conditions (e2) = (d2)*10%	Annual cost of mortality (f2) = (e2)*\$80	10-year incremental cost (g2) = (f2)*10
NSW	914	\$73,144	\$731,444
VIC	480	\$38,411	\$384,114
QLD	81	\$6,470	\$64,699
SA	620	\$49,594	\$495,936
WA	842	\$67,351	\$673,513
TAS	63	\$5,029	\$50,293
NT	-	\$0	\$0
ACT	-	\$0	\$0
Australia	3,000	\$240,000	\$2,400,000
Present value 7% discount rate			\$1,575,383
3% discount rate			\$1,987,620
10% discount rate			\$1,340,633

A3.2.1 Incremental cost of Variation C2 from the base case

The total 10-year incremental cost of all standards under Variation C2 as compared to the base case would be approximately **\$4.77m** or **\$3.54m** in 2012-13 dollars using a 7% discount rate, as shown in Table A3.10.

Table A3.10 – Summary of quantifiable 10-year incremental cost of proposed standards under variation C2 – 2012-13 dollars

Proposed standard	10-year cost	PV cost - 7% discount rate	PV cost - 3% discount rate	PV cost - 10% discount rate
5.2	\$65,742	\$57,422	\$61,968	\$54,332
5.7	\$1,850,000	\$1,615,862	\$1,743,802	\$1,528,926
6.1	\$186,145	\$122,187	\$154,161	\$103,980
9.4	\$263,902	\$173,228	\$218,557	\$147,415
Mulesing < 6 months only	\$2,400,000	\$1,575,383	\$1,987,620	\$1,340,633
Total	\$4,765,789	\$3,544,081	\$4,166,108	\$3,175,285

A summary of 10-year quantifiable costs of the proposed standards by state and territory under Variation C2 in 2012-13 present value dollars by state and territory is summarised in Table A3.11.

Table A3.11 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C2 by state and territory – 2012-13 dollars

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403	\$0	\$33,266	\$0	\$0	\$0	\$0	\$173,228
Mulesing < 6 months only	\$480,127	\$252,136	\$42,469	\$325,537	\$442,100	\$33,013	\$0	\$0	\$1,575,383
Total	\$1,907,223	\$442,593	\$114,207	\$449,781	\$532,841	\$104,979	\$9	\$120	\$3,544,081

Taking the total 10-year incremental cost of the standards (in Table A3.9) and subtracting the benefit of the standards (in Table A2.12 of Appendix 2) and then dividing by the total flock of sheep in each state or territory (in Table A2.1 of Appendix 2) – gives the net impact per sheep ranging from a cost a savings of \$0.05 in the ACT to a cost of \$0.03 in NSW, as shown in Table A3.12

Table A3.12 – Range of average 10-year cost per sheep as a result of the proposed standards under Variation C2 by state and territory –2012-13 dollars

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost	\$875,103	-\$177,631	\$34,715	\$15,137	\$123,070	\$29,000	\$9	-\$2,899	\$888,833
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.03	-\$0.01	\$0.01	\$0.00	\$0.01	\$0.01	\$0.00	-\$0.05	\$0.01

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

A3.2.2 Incremental cost of Variation C2 from Option B

The total 10-year incremental cost of all standards under Variation C2 as compared to Option B (i.e. mulesing < 6 months of age only under Variation C2) would be approximately **\$2.4m** or **1.58m** in 2012-13 dollars. Table A3.13 shows the 10-year incremental cost of Variation C2 as compared to Option B by state and territory. These estimates are provided from Table A3.9. The main impact of going to Variation C2 as compared with Option B would be on NSW followed by WA and SA.

Table A3.13 – 10-year incremental cost of Variation C2 as compared to Option B by state and territory –2012-13 dollars

Going from Option B to Variation C2	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Plus mulesing < 6 months only ¹⁴⁹	\$480,127	\$252,136	\$42,469	\$325,537	\$442,100	\$33,013	\$0	\$0	\$1,575,383
Net Difference between Option B and Variation C2	\$480,127	\$252,136	\$42,469	\$325,537	\$442,100	\$33,013	\$0	\$0	\$1,575,383

A3.3 Unquantifiable incremental cost of banning single penning for wool production – Variation C3

Variation C3 would involve banning single penning of sheep for fine wool production (<13 microns¹⁵⁰) and this provides a variation to proposed standard 9.7 (which allows for single penning as long as the sheep is able to turn around, see, hear, smell, and touch neighbouring sheep). The concern here is that individually housed sheep are deprived of social interaction with other sheep and that such housing would therefore be seen as cruel because it would go against ‘the five freedoms principles’. It is generally accepted that sheep will seek the company of other sheep if given the opportunity to do so.

Research was undertaken in 2009¹⁵¹ to examine the prevalence and incidence of abnormal behaviour in 96 castrated ultra-fine merino wethers housed individually indoors in Victoria, by quantifying the time budgets and incidence and type of stereotypies or redirected behaviours. This involved placing digital cameras above approximately 10% of the sheep in a shed and recording 48 hours of observations of each sheep including 15 minutes of instantaneous sampling between 8:15am and 6:15pm for two consecutive days over a 3-week period. In particular, time spent, standing, moving, lying, ruminating, eating, drinking and sleeping was recorded.

It was found that sheep on average spent 62% of their time idle, 17% feeding, 1% drinking, 5% pacing, 10% chewing pen fixtures and 4% nosing pen fixtures. 71% of the sheep displayed one or more of the behaviours of pacing, and chewing and nosing pen fixtures for more than 10% of the day and 47% displayed one or more of these behaviours for more than 20% of the day. The prevalence and incidence of these ‘abnormal’ behaviours appeared to be high, especially in relation to that of sheep grazed outdoors on pasture, and raised the question of the welfare risk to these animals. However, the authors qualified their findings that ‘without a more comprehensive appreciation of other aspects of the animal’s biology, such as stress physiology and fitness characteristics, it is difficult to understand the welfare implications of these behaviours.’¹⁵²

¹⁴⁹ See Table A3.9 for source of estimates

¹⁵⁰ The record of 11.5 microns was achieved last year

¹⁵¹ Lauber, M et al, “Prevalence and Incidence of Abnormal Behaviours in Individually Housed Sheep”, *Animals* 2012, Vol.2, pp.27-37

¹⁵² *Ibid*, p.27

Under this variation any enterprise that has sheep individually housed in pens would be required to reconstruct larger pens for group housing. However, according to the president of the Australian Superfine Wool Growers Association (ASWGA) there are *no known single pen shed sheep operations left in the country*. The proposed standard is a defensive standard aimed to communicate the undesirability of this practice and prevent any return to commercial use or any use of single penning for non-commercial purposes.

Consequently, the incremental cost of this variation to proposed standard 9.7 would entail the unknown foregone opportunity of not being able to place sheep in single pens in future. However this opportunity cost is not likely to be significant, as, according to the president of ASWGA, market forces will mitigate against single pens. The cost of production for shed sheep is in the order of \$280 per kg wool and few producers receive this. Furthermore, this small market is under pressure by large volumes of 14 to 19 micron wool from paddock sheep. According to the president of Wool Producers Australia (WPA) – ‘The real winners are the middle microns. Finer wools are for more luxury buyers in Europe and the US, and they have their economic problems.’¹⁵³ Moreover, one of the largest buyers of super fine wools in the world Loro Piana, has recently banned the purchase of wool from single penned sheep.

A3.4 Incremental cost of banning sheep tethering – Variation C4

Variation C4 would involve banning tethering of sheep and this provides a variation to proposed standard 5.7 (which requires the daily exercise of tethered sheep). This variation deals with the real welfare issue of welfare of tethering which is the deprivation of social interaction with other sheep.

The outcome could be to dispose of the sheep or to create suitable fenced areas for the sheep and provide sheep with company of other sheep. It is expected that the outcome of this variation would be to create suitable fenced areas for sheep as this would be cheapest option and would involve a one-off cost identical to the costs of proposed standard 5.7 (see part A2.2 of Appendix 2).

The 10-year cost of banning the practice of permanently tethered sheep under variation C4 would be identical to the cost of proposed standard 5.7 in Option B and is estimated to be **\$1.85m** over 10 years or approximately **\$1.62m** in 2012-13 present value dollars.

A3.5 Incremental cost of mandating pain relief for laparoscopic LAI and ET – Variation C5

Proposed standard 8.1 notes that a person performing artificial breeding procedures on a sheep must not cause unreasonable pain, distress or injury to a sheep. Variation C5 would mandate pain relief for laparoscopic artificial insemination (LAI) and embryo transfer (ET). LAI and ET are important methods for genetic gain (i.e. producing genetically improved progeny) not guaranteed with conventional breeding methods. In reality however, LAI and ET are minority breeding methods and an anaesthetic is used as existing practice for ET.

LAI, which requires the use of a laparoscope, is an invasive procedure used to inject semen directly into the uterus in order to provide for reliable conception with thawed semen. ET represents the collection and transfer of embryos from ewes to donor ewes. ET involves an invasive procedure where the abdominal cavity of ewes is penetrated and collected embryos are transferred to donor

¹⁵³ Thistleton, J, March 14, 2012, *Market none-too-sheepish about Australian wool*, Sydney Morning Herald (see: <http://www.smh.com.au/national/market-nonetoosheepish-about-australian-wool-20120313-1uyto.html> accessed 28 December 2012)

ewes with the use of a laparoscope - again through the abdominal cavity. This procedure is more invasive and demanding than LAI and a deeper level of anaesthesia is required.

Under variation C5 – pain relief for LAI and ET is taken to be most commonly in the form of a single dose sedative analgesic (Xylazine 20) and a local anaesthetic (lignocaine). Other combinations of sedative and anaesthetic drugs are possible. There are an estimated 300,000 sheep, which undergo the LAI procedure, and it is estimated that 50% of these procedures are performed without pain relief¹⁵⁴ under the base case. Furthermore, there are an estimated 30,000 sheep involved with the ET procedure, however it is noted that none of these procedures are performed without pain relief¹⁵⁵ and in this context Variation C5 becomes a defensive standard for ET.

LAI would require a single dose sedative analgesic (i.e. Xylazine 20) taken to be \$0.40 for 0.4ml delivered per lamb plus \$0.50 disposal (needle costs) plus time cost of \$80¹⁵⁶ per hour for a competent contractor. Noting that it would take around 30 seconds to administer the analgesic per sheep, this would mean a time cost of \$0.66 per sheep. Therefore, the cost of Xylazine 20 would be \$0.40 plus \$0.50 disposal cost plus a time cost of \$0.66 per sheep = **\$1.57 per sheep**.

The incremental 10-year cost savings of requiring pain relief for LAI under Variation C5 is estimated to be **\$2.4m** or **\$1.55m** in 2012-13 present value dollars, as shown in Table A3.14.

Table A3.14 – 10-year incremental cost of requiring pain relief for LAI by state and territory under Variation C5 –2012-13 dollars

Jurisdiction	No. of breeding ewes affected (h2) = (i) ¹⁵⁷ / 41,821,781*300,000*50%	Annual cost of pain relief (i2) = (h2)*\$1.57	10-year cost (j2) = (i2)*10
NSW	55,302	\$86,823	\$868,234
VIC	30,992	\$48,657	\$486,569
QLD	7,043	\$11,057	\$110,569
SA	21,998	\$34,536	\$345,364
WA	29,893	\$46,932	\$469,320
TAS	4,669	\$7,331	\$73,310
NT	1	\$2	\$15
ACT	103	\$162	\$1,618
Australia	150,000	\$235,500	\$2,355,000
<i>Present value 7% discount rate</i>			\$1,545,844
3% discount rate			\$1,950,352
10% discount rate			\$1,315,496

A3.5.1 Incremental cost of Variation C5 from the base case

The total 10-year incremental cost all standards under Variation C5 as compared to the base case would be approximately **\$4.73m** or **\$3.52m** in 2012-13 dollars using a 7% discount rate, as shown in Table A3.15.

Table A3.15 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C5 – 2012-13 dollars

¹⁵⁴ Based on advice from AHA

¹⁵⁵ Based on advice from AHA

¹⁵⁶ Based on advice from AHA

¹⁵⁷ See Table A2.1 for source of estimates

Proposed standard	10-year cost	PV cost - 7% discount rate	PV cost - 3% discount rate	PV cost - 10% discount rate
5.2	\$65,742	\$57,422	\$61,968	\$54,332
5.7	\$1,850,000	\$1,615,862	\$1,743,802	\$1,528,926
6.1	\$186,145	\$122,187	\$154,161	\$103,980
9.4	\$275,589	\$180,899	\$228,236	\$153,943
Pain relief for all LAI and ET	\$2,355,000	\$1,545,844	\$1,950,352	\$1,315,496
Total	\$4,732,476	\$3,522,214	\$4,138,520	\$3,156,677

A summary of 10-year quantifiable costs of the proposed standards by state and territory under Variation C5 in 2012-13 present value dollars by state and territory is summarised in Table A3.16.

Table A3.16 – Summary of quantifiable 10-year incremental cost of proposed standards under Variation C5 by state and territory – 2012-13 dollars

Proposed standard	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
5.2	\$21,508	\$14,372	\$2,383	\$8,926	\$8,153	\$2,033	\$4	\$42	\$57,422
5.7	\$1,292,689	\$64,634	\$64,634	\$64,634	\$64,634	\$64,634	\$0	\$0	\$1,615,862
6.1	\$43,668	\$33,047	\$4,720	\$17,417	\$17,953	\$5,298	\$5	\$78	\$122,187
9.4	\$69,231	\$78,403	\$0	\$33,266	\$0	\$0	\$0	\$0	\$180,899
Pain relief for all LAI and ET	\$569,917	\$319,388	\$72,579	\$226,701	\$308,066	\$48,122	\$10	\$1,062	\$1,545,844
Total	\$1,997,013	\$509,845	\$144,317	\$350,944	\$398,807	\$120,088	\$19	\$1,182	\$3,522,214

Taking the total 10-year incremental cost of the standards (in Table A3.16) and subtracting the benefit of the standards (in Table A2.12 of Appendix 2) and then dividing by the total flock of sheep in each state or territory (in Table A2.1 of Appendix 2) – gives the average net impact per sheep ranging from a cost a savings of \$0.03 in the ACT to a cost of \$0.04 in NSW, as shown in Table A3.17.

Table A3.17 – Range of average 10-year cost per sheep as a result of the proposed standards under Variation C5 by state and territory –2012-13 dollars

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Total net cost	\$964,893	-\$110,379	\$64,825	-\$83,700	-\$10,964	\$44,109	\$19	-\$1,837	\$866,966
Total flock	26,824,697	15,212,015	3,653,239	11,008,541	13,999,854	2,344,469	1,855	54,092	73,098,762
Cost per sheep	\$0.04	-\$0.01	\$0.02	-\$0.01	-\$0.00	\$0.02	\$0.01	-\$0.03	\$0.01

Note: Care should be taken in using the average cost per sheep in a jurisdiction to interpret the impact of standards or variations on a particular industry sector or an individual farmer's herd.

A3.2.2 Incremental cost of Variation C5 from Option B

The total 10-year incremental cost all standards under Variation C5 as compared to Option B (i.e. pain relief for all LAI and ET procedures under Variation C5) would be approximately **\$2.34m** or **1.55m** in 2012-13 dollars. Table A3.18 shows the 10-year incremental cost of Variation C5 as compared to Option B by state and territory. These estimates are provided from Table A3.14. The main impact of going to Variation C5 as compared with Option B would be on NSW followed by WA and SA.

Table A3.18 – 10-year incremental cost of Variation C5 as compared to Option B by state and territory –2012-13 dollars

Going from Option B to Variation C5	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	TOTAL
Plus pain relief all LAI and ET ¹⁵⁸	\$569,917	\$319,388	\$72,579	\$226,701	\$308,066	\$48,122	\$10	\$1,062	\$1,545,844
Net Difference between Option B and Variation C5	\$569,917	\$319,388	\$72,579	\$226,701	\$308,066	\$48,122	\$10	\$1,062	\$1,545,844

A3.6 Incremental cost of requiring docked tails to have at least one free palpable joint – Variation C6

Variation C6 requires docked tails to have at least *one free palpable joint*. This is a variation on proposed standard 6.3, which requires that a docked tail stump have *two palpable free joints*. Tail docking is conducted to make sheep management more efficient by reducing faecal dag formation and hence controlling breech fly strike risk. Webb Ware et al 2000¹⁵⁹ reported that leaving the tail on lambs can result in a 3 fold increase in fly strike rates in Australia. However, the minimum proposed standard for tail length is required to prevent total loss of the tail which has adverse health and welfare implications and is not necessary for breech fly strike control. The practice of removing the entire tail is not acceptable. The generally regarded optimum length is three joints. Proposed standard 6.3 sets a baseline requirement that protects the welfare of the sheep and provides a margin for error by the tail-docking surgeon recognising that absolute accuracy maybe difficult to achieve in small lambs at the recommended age for marking of 2 to 12 weeks.

Variation C6 is provided for comparison purposes only and represents a reversal of a previous proposal where the proposed standard required one palpable free joint and the variation required two palpable free joints.

Variation C6 is not expected to provide any additional welfare benefits over and above proposed standard S6.3 as the welfare difference between one and three joints is unlikely to be significant. The welfare problems are created when no tail stump is left, or less commonly when the tail stump is too long. Neither is variation C6 likely to impose any incremental operation cost. In some regions it is common practice to ‘dock short’ leaving a tail length of one free joint and this practice could continue if the standard in C6 was to be adopted. The current proposed S6.3 will require an investment by industry to change practice and ensure compliance. Variation C6 then represents a potential saving.

A3.7 Summary of incremental quantifiable costs and benefits of Options A and B and each Variation C1 to C6

Table A3.19 summarises the incremental quantifiable costs and benefits of Options A, B and Variations C1 to C6. Option B and Variations C4 and C6 entail identical quantifiable incremental costs and benefits and the same welfare outcomes.

Table A3.19 – 10-year quantifiable incremental costs and benefits of Options A and B and Variations C1 to C6 as compared to the base case by state and territory –2012-13 dollars

¹⁵⁸ See Table A3.15 for source of estimates

¹⁵⁹ Webb Ware JK, Vizard AI, Lean GR. Effects of tail amputation and treatment with and albendazole controlled-release capsule on the health and productivity of prime lambs. *Aust Vet J* 2000, 78: 838-842

Option/Variation	Description	Quantifiable costs	Quantifiable benefits	Quantifiable net benefit
Option A	Guidelines	\$0	\$0	\$0
Option B	Proposed standards	\$1,976,370	\$2,655,248	\$678,878
Variation C1	Pain relief for all mulesing	\$32,275,028	\$2,655,248	-\$29,619,780
Variation C2	All mulesing < 6 months	\$3,544,081	\$2,655,248	-\$888,833
Variation C3	Banning of sheep single penning	\$1,976,370	\$2,655,248	\$678,878
Variation C4	Banning of sheep tethering	\$1,976,370	\$2,655,248	\$678,878
Variation C5	Pain relief for all LAI and ET	\$3,522,214	\$2,655,248	-\$866,966
Variation C6	One free palpable joint with docked tails	\$1,976,370	\$2,655,248	\$678,878

Appendix 4 - List of relevant federal, state and territory legislation

Table A4.1: Summary of relevant state and territory legislation

State or Territory	Act	Existing regulations	Existing standards and guidelines
ACT	Animal Welfare Act 1992.	<i>Animal Welfare Regulation 2001</i>	Model Code of Practice for the Welfare of Animals – Sheep
NSW	Prevention of Cruelty to Animals Act 1979	<i>Prevention of Cruelty to Animals Regulation, 2006</i>	Model Code of Practice for the Welfare of Animals – Sheep
NT	Animal Welfare Act	<i>Animal Welfare Regulations</i> ¹⁶⁰	Model Code of Practice for the Welfare of Animals – Sheep
QLD	Animal Care and Protection Act 2001	<i>Animal Care and Protection Regulation 2012</i>	Model Code of Practice for the Welfare of Animals – Sheep
SA	Animal Welfare Act 1985	<i>Animal Welfare Regulations 2012</i>	Model Code of Practice for the Welfare of Animals – Sheep
TAS	Animal Welfare Act 1993	<i>Animal Welfare Regulations 2008</i>	Animal Welfare Guidelines – Sheep (October 2008) ¹⁶¹
VIC	Prevention of Cruelty to Animals Act 1986 Livestock Management Act 2010	<i>Prevention of Cruelty to Animals Regulations 1997</i>	Vic Code of Accepted Farming Practice for the Welfare of Sheep (June 2007).
WA	Animal Welfare Act 2002	<i>Animal Welfare (General) Regulations 2003</i>	Code of practice for sheep in Western Australia (March 2003) ¹⁶²

¹⁶⁰ Regulations are not needed in NT to adopt standards. This can be done by the Minister by notice in the gazette. NT regulations do not have dates in their titles

¹⁶¹ Based on the Model Code of Practice for the Welfare of Animals – The Sheep, (2nd edition 2006)

¹⁶² Based on The Australian Model Code of Practice for the Welfare of Animals – Sheep (1st edition 1991) and adapted for use in Western Australia

Appendix 5 - List of proposed standards with negligible costs incremental to the base case

Std. No.	Subject matter	Base case
1	Responsibilities	
S1.1	A person must take reasonable actions to ensure the welfare of sheep under their care.	Market forces, TAS Act ¹⁶³ , (new general outcomes-based standard)
2	Feed and Water	
S2.1	A person in charge must ensure sheep have reasonable access to adequate and appropriate feed and water.	Market forces, POCTA, ¹⁶⁴ Tas Act, Vic Code ('must'), ¹⁶⁵ Sheep MCOP guidelines only (new standard)
3	Risk management	
S3.1	A person in charge must take reasonable actions ¹⁶⁶ to ensure the welfare of a sheep from threats including weather extremes, drought, fires, floods, disease, injury and predation.	Market forces, POCTA, Tas Act, Sheep MCOP guidelines only (new standard)
S3.3	A person in charge must ensure appropriate treatment or humane killing for a sick, injured or diseased sheep at the first reasonable opportunity.	POCTA, Tas Act, Sheep MCOP guidelines only (new standard)
4	Facilities and equipment	
S4.1	A person in charge must take reasonable actions in the construction, maintenance and operation of facilities and equipment to ensure the welfare of a sheep.	Market forces, POCTA, Tas Act, Vic Code ('must'), Sheep MCOP guidelines only (new standard)
5	Handling and husbandry	
5.1	A person must in a reasonable manner and must not: 1) lift it off the ground by only one leg or the head, ears, horns, neck, tail or wool, unless in an emergency; or 2) throw or drop it except to land on its feet from a height less than one metre; or 3) strike it in an unreasonable manner, punch or kick; or 4) drag recumbent sheep by only one leg, except in an emergency to allow safe handling, lifting, treatment or *humane killing*; or 5) drag it by the ears, tail, or wool; or 6) drag it by mechanical means, except in an emergency for the minimum distance to allow safe handling, lifting, treatment or humane killing.	POCTA, ¹⁶⁷ Tas Act, Sheep MCOP guidelines only (new standard)
S5.3	A person in charge must ensure a sheep is shorn before the wool reaches 250mm in length	Market forces (normal practice to shear annually). POCTA, Tas guidelines ¹⁶⁸ , Sheep MCOP guidelines only (new standard)
S5.4	A person must consider the welfare of sheep when using an electric prod and must not use it; 1) on genital, anal, udder or facial areas of sheep 2) on sheep under three months old 3) on sheep that are unable to move away	POCTA, Tas Act, Sheep MCOP guidelines only (new standard).

¹⁶³ Duty of care provisions of Tasmanian *Animal Welfare Act 1993*

¹⁶⁴ The general cruelty provisions of the relevant Prevention of Cruelty to Animals Act or equivalent in each state and territory.

¹⁶⁵ Victorian Code of Accepted Farming Practice for the Welfare of Sheep.

¹⁶⁶ Note: The * means a defined term in the standards.

¹⁶⁷ Assuming that deliberate acts of this nature could result in a cruelty prosecution.

¹⁶⁸ Para 6.5 of Tas animal welfare guidelines says 'Sheep must be shorn annually' and warn of cruelty prosecution for excessively long fleeces.

Std. No.	Subject matter	Base case
	4) in an unreasonable manner on sheep.	
S5.5	A person must not trim or grind the teeth of sheep.	POCTA, Tas Act, Vic Act, NSW Act, ¹⁶⁹ Vic Code ('must not'), Sheep MCOP guidelines only (new standard)
S5.6	A person must not alter the anatomy of the prepuce by incising the surrounding skin (pizzle dropping) on sheep.	POCTA, Tas Act, Sheep MCOP guideline only (new standard) Not banned in any jurisdiction, but regarded as an outmoded practice. Code defence to cruelty in Vic.
	Tail docking and castration	
S6.2	A person must not tail dock sheep that are more than six months old without using pain relief and haemorrhage control.	POCTA, Sheep MCOP 9.3, Tas Act, Vic Sheep Code 9.3, WA Code 10.2; Vet only ¹⁷⁰ over 6 months of age in NSW and QLD.
S6.3	A person must leave a docked tail stump of a sheep with at least two palpable free joints remaining.	POCTA, Tas Act, Sheep MCOP guidelines only (new standard)
S6.4	A person must not castrate or use the cryptorchid method on sheep that are more than six months old without using pain relief and haemorrhage control.	POCTA, Tas Act, Sheep MCOP 9.4, Vic Code ('must' and vet only), WA Code 10.4
	Mulesing	
S7.2	A person must not mules sheep that are less than 24 hours old or more than 12 months old.	POCTA, Tas Act, Sheep MCOP Appendix Three Para 3B.
S7.3	A person must not mules sheep that are 6–12 months old without using pain relief.	POCTA, Tas Act, Sheep MCOP Appendix Three Para 3B.
S7.4	A person must not mules sheep showing signs of debilitating disease, weakness or ill-thrift	POCTA, Tas Act, Sheep MCOP Appendix Three Para 3A.
S7.5	A person mulesing sheep must only remove wool bearing skin.	POCTA, Tas Act, Sheep MCOP guidelines only (new standard)
6	Breeding management	
S8.1	A person performing artificial breeding procedures on a sheep must not cause unreasonable pain, distress or injury to a sheep	POCTA, Tas Act, (new standard)
S8.2	A person must be a veterinarian, or operating under veterinary supervision, to perform surgical embryo transfer or laparoscopic insemination of a sheep	POCTA, Tas Act, (new standard) Assume only vets or persons operating under vet supervision would do this anyway, with rare exceptions. (Note that direct supervision is not required).
	Intensive sheep production systems	
S9.1	A person in charge must ensure that feed and water is available daily to a sheep in intensive production systems	Market forces, POCTA, Tas Act, Sheep MCOP guideline only (new standard).
S9.2	A person in charge must ensure the inspection of sheep daily in the first week of confinement to ensure adaptation to the intensive production system	Market forces, Tas Act, Sheep MCOP guideline only (new standard).
S9.3	A person in charge must take reasonable action where a sheep has not adapted to an intensive production system	Market forces, Tas Act, Sheep MCOP guideline only (new standard).
S9.5	A person in charge must ensure an indoor housing system for a sheep has effective ventilation.	Market forces, Tas Act, Sheep MCOP guideline only (new standard). All systems already comply.
S9.6	A person in charge must ensure sufficient space to allow all sheep to lie on their sternums at the same time in an intensive production system	Market forces, Tas Act, Sheep MCOP guideline only (new standard).
S9.7	A person in charge must ensure a sheep housed in a single pen for fine wool production is able to turn around, see, hear, smell, and touch neighbouring sheep	Market forces, Tas Act, Sheep MCOP guideline only (new standard).

¹⁶⁹ Sheep teeth grinding, clipping or trimming are expressly prohibited under Vic and NSW legislation

¹⁷⁰ Assume vets would use pain relief

Std. No.	Subject matter	Base case
	Humane killing	
S10.1	A person in charge must ensure killing methods for a sheep result in rapid loss of consciousness followed by death while unconscious	POCTA, Tas Act, Vic ACT ¹⁷¹ and WA Code ¹⁷² ('musts'), Sheep MCOP guideline only (new standard).
S10.2	A person killing a sheep must have the relevant knowledge, experience and skills to kill the sheep humanely or be under the direct supervision of a person who has the relevant knowledge, experience and skills unless: <ul style="list-style-type: none"> • a sheep is suffering and needs to be killed to prevent undue suffering; and • there is an unreasonable delay until direct supervision by a person who has the relevant knowledge, experience and skills is possible 	POCTA, Tas Act, Sheep MCOP guideline only (new standard). Assume necessary for compliance with S10.1.
S10.3	A person in charge must ensure sheep that are suffering from severe distress, disease or injury that cannot be reasonably treated must ensure that they are killed at the first reasonable opportunity	POCTA, Tas Act, Sheep MCOP guideline only (new standard).
S10.4	A person killing a sheep must take reasonable actions to confirm the sheep is dead.	POCTA, Tas Act, Sheep MCOP guideline only (new standard). Assume necessary for compliance with S10.1.
S10.5	A lamb must weigh less than 10 kilograms for a person to kill it by a blow to the forehead	POCTA, Tas Act, Sheep MCOP guideline only (new standard).
S10.6	A person must only use bleeding-out by neck cut to kill a conscious sheep where there is no firearm, captive bolt or lethal injection reasonably available.	POCTA, Tas Act, Sheep MCOP guideline only (new standard).

¹⁷¹ ACT Code of Practice for the Welfare of Animals – Sheep

¹⁷² WA Code of Practice for Sheep 2003

Appendix 6 – Number of sheep annually affected by welfare standards under Option B by State and territory

The change of sheep farming/invasive procedures under Option B leading to additional welfare and the number of sheep affected is summarised in Table A6.1 by state and territory. However it is important to note the number of sheep alone does not reflect the severity of the consequences; but rather it is the combination of:

- Number of animals affected (small or large);
- Duration of practice (one-off or ongoing); and
- Impact of animal husbandry procedure (primarily invasive or less-invasive).

Moreover, the sheep numbers in Table A6.1 are not mutually exclusive whereby given sheep can be affected by different issues within a state or territory. Therefore, even if the number of sheep affected by each issue were known - any summation and inference from such a summation would be misleading and incorrect.

Table A6.1 – Number of sheep annually affected by Option B welfare standards as compared to the base case by state and territory

Jurisdiction	Welfare issue	Number of sheep affected
NSW	inspection of sheep at intervals	% of 26,824,697
NSW	handle sheep in a reasonable manner	% of 26,824,697
NSW	dog that habitually bites is muzzled	Unknown (minor)
NSW	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
NSW	consider the welfare of sheep when using an electric prod	Unknown
NSW	must not trim or grind the teeth of sheep	Unknown (minor)
NSW	no pizzle dropping	Unknown (minor)
NSW	sheep that are tethered are able to exercise daily	1,000
NSW	tail docking with skilled practitioner or under supervision	% of 12,208,426
NSW	castration with skilled practitioner or under supervision	% of 6,104,213
NSW	at least two palpable free joints remaining with tail docked sheep	% of 12,208,426
NSW	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
NSW	faeces and urine must not compromise the welfare of a sheep	20
VIC		
VIC	inspection of sheep at intervals	% of 15,212,015
VIC	handle sheep in a reasonable manner	% of 15,212,015
VIC	dog that habitually bites is muzzled	Unknown (minor)
VIC	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
VIC	consider the welfare of sheep when using an electric prod	Unknown
VIC	must not trim or grind the teeth of sheep	Unknown (minor)
VIC	no pizzle dropping	Unknown (minor)
VIC	sheep that are tethered are able to exercise daily	50
VIC	tail docking with skilled practitioner or under supervision	% of 7,107,956
VIC	castration with skilled practitioner or under supervision	% of 3,553,978
VIC	at least two palpable free joints remaining with tail docked sheep	% of 7,107,956
VIC	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
VIC	faeces and urine must not compromise the welfare of a sheep	20
QLD		
QLD	inspection of sheep at intervals	% of 3,653,239
QLD	handle sheep in a reasonable manner	% of 3,653,239
QLD	dog that habitually bites is muzzled	Unknown (minor)
QLD	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
QLD	consider the welfare of sheep when using an electric prod	Unknown
QLD	must not trim or grind the teeth of sheep	Unknown (minor)

Jurisdiction	Welfare issue	Number of sheep affected
QLD	no pizzle dropping	Unknown (minor)
QLD	sheep that are tethered are able to exercise daily	50
QLD	tail docking with skilled practitioner or under supervision	% of 1,196,502
QLD	castration with skilled practitioner or under supervision	% of 598,251
QLD	at least two palpable free joints remaining with tail docked sheep	% of 1,196,502
QLD	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
QLD	faeces and urine must not compromise the welfare of a sheep	-
SA		
SA	inspection of sheep at intervals	% of 11,008,541
SA	handle sheep in a reasonable manner	% of 11,008,541
SA	dog that habitually bites is muzzled	Unknown (minor)
SA	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
SA	consider the welfare of sheep when using an electric prod	Unknown
SA	must not trim or grind the teeth of sheep	Unknown (minor)
SA	no pizzle dropping	Unknown (minor)
SA	sheep that are tethered are able to exercise daily	50
SA	tail docking with skilled practitioner or under supervision	% of 5,111,474
SA	castration with skilled practitioner or under supervision	% of 2,555,737
SA	at least two palpable free joints remaining with tail docked sheep	% of 5,111,474
SA	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
SA	faeces and urine must not compromise the welfare of a sheep	10
WA		
WA	inspection of sheep at intervals	% of 13,999,854
WA	handle sheep in a reasonable manner	% of 13,999,854
WA	dog that habitually bites is muzzled	Unknown (minor)
WA	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
WA	consider the welfare of sheep when using an electric prod	Unknown
WA	must not trim or grind the teeth of sheep	Unknown (minor)
WA	no pizzle dropping	Unknown (minor)
WA	sheep that are tethered are able to exercise daily	50
WA	tail docking with skilled practitioner or under supervision	% of 6,546,000
WA	castration with skilled practitioner or under supervision	% of 3,273,000
WA	at least two palpable free joints remaining with tail docked sheep	% of 6,546,000
WA	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
WA	faeces and urine must not compromise the welfare of a sheep	-
TAS		
TAS	inspection of sheep at intervals	-
TAS	handle sheep in a reasonable manner	% of 2,344,469
TAS	dog that habitually bites is muzzled	Unknown (minor)
TAS	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
TAS	consider the welfare of sheep when using an electric prod	Unknown
TAS	must not trim or grind the teeth of sheep	Unknown (minor)
TAS	no pizzle dropping	Unknown (minor)
TAS	sheep that are tethered are able to exercise daily	50
TAS	tail docking with skilled practitioner or under supervision	% of 1,097,709
TAS	castration with skilled practitioner or under supervision	% of 548,855
TAS	at least two palpable free joints remaining with tail docked sheep	% of 1,097,709
TAS	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
TAS	faeces and urine must not compromise the welfare of a sheep	-
NT		
NT	inspection of sheep at intervals	% of 1,855
NT	handle sheep in a reasonable manner	% of 1,855
NT	dog that habitually bites is muzzled	Unknown (minor)
NT	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
NT	consider the welfare of sheep when using an electric prod	Unknown
NT	must not trim or grind the teeth of sheep	Unknown (minor)
NT	no pizzle dropping	Unknown (minor)
NT	sheep that are tethered are able to exercise daily	-
NT	tail docking with skilled practitioner or under supervision	-

Jurisdiction	Welfare issue	Number of sheep affected
NT	castration with skilled practitioner or under supervision	-
NT	at least two palpable free joints remaining with tail docked sheep	-
NT	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
NT	faeces and urine must not compromise the welfare of a sheep	-
ACT		
ACT	inspection of sheep at intervals	% of 54,092
ACT	handle sheep in a reasonable manner	% of 54,092
ACT	dog that habitually bites is muzzled	Unknown (minor)
ACT	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
ACT	consider the welfare of sheep when using an electric prod	Unknown
ACT	must not trim or grind the teeth of sheep	Unknown (minor)
ACT	no pizzle dropping	Unknown (minor)
ACT	sheep that are tethered are able to exercise daily	-
ACT	tail docking with skilled practitioner or under supervision	% of 21,197
ACT	castration with skilled practitioner or under supervision	% of 10,599
ACT	at least two palpable free joints remaining with tail docked sheep	21,197
ACT	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
ACT	faeces and urine must not compromise the welfare of a sheep	-
Australia		
Australia	inspection of sheep at intervals	% of 70,754,293
Australia	handle sheep in a reasonable manner	% of 73,098,762
Australia	dog that habitually bites is muzzled	Unknown (minor)
Australia	sheep is shorn before the wool reaches 250mm in length	Unknown (minor)
Australia	consider the welfare of sheep when using an electric prod	Unknown
Australia	must not trim or grind the teeth of sheep	Unknown (minor)
Australia	no pizzle dropping	Unknown (minor)
Australia	sheep that are tethered are able to exercise daily	1,250
Australia	tail docking with skilled practitioner or under supervision	% of 33,289,264
Australia	castration with skilled practitioner or under supervision	% of 16,644,632
Australia	at least two palpable free joints remaining with tail docked sheep	% of 33,289,264
Australia	AI or ET performed by veterinarian or under veterinary supervision only	Unknown (rare)
Australia	faeces and urine must not compromise the welfare of a sheep	50

Appendix 7 – Full list of public consultation questions

Public consultation question 1: In your experience, to what extent does the existing MCOP and related regulations create uncertainty for industry? Does such uncertainty vary between different states and territories?

Public consultation question 2: Do you know the number or percentage of farm hands needing training for mulesing under the proposed standard S7.1? Do you have any information to improve the estimation of costs in relation to mulesing?

Public consultation question 3: Do you know the number or percentage of lambs that are affected by adverse welfare outcomes due to unskilled/unsupervised farmhands undertaking tail-docking and castration procedures? Do you have any other information to improve the estimation of costs under the proposed standard S 6.1?

Public consultation question 4: Do you know of the number or percentage of sheep not receiving pain relief for castration? Do you have any other information to improve the estimation of costs under the proposed standard S6.4?

Public consultation question 5: Do you know the number or percentage of sheep that have a tail that is less than two palpable joints long? Do you have any other information to improve the estimation of costs under the proposed standard S6.3?

Public consultation question 6: Do you know the number or percentage of ewes that are affected by insufficient pain relief during artificial breeding procedures? Do you have any other information to improve the estimation of costs under the proposed standards S8.1 and S8.2?

Public consultation question 7: Do you know the number of sheep that are tethered and will be affected under the proposed standard S5.7? Do you have any other information to improve the estimation of costs?

Public consultation question 8: Do you know the number or percentage of sheep that are affected by adverse welfare outcomes due to dog bites? Do you have any other information to improve the estimation of costs under the proposed standard S5.2?

Public consultation question 9: Do you know the number or percentage of sheep that are affected by adverse welfare outcomes due to poor hygiene in sheds? Do you have any other information to improve the estimation of costs under the proposed standard S9.4?

Public consultation question 10: Do you know the number or percentage of sheep, on average, that carry wool length greater than 250mm outside shearing periods? Do you have any other information to improve the estimation of costs under the proposed standard S5.3?

Public consultation question 11: Do you know the number or percentage of sheep, on average, that undergo tooth trimming? Do you have any other information to improve the estimation of costs under the proposed standard S5.5?

Public consultation question 12: Do you know the number or percentage of sheep, on average, that are affected by the inappropriate use of electric prodders? Do you have any other information to improve the estimation of costs under the proposed standard S5.4?

Public consultation question 13: Do you know the number or percentage of sheep, on average, that are subjected to the pizzle dropping procedure? Do you have any other information to improve the estimation of costs under the proposed standard S5.6?

Public consultation question 14: Are there any poor risk management practices other than those already discussed in this Part of the RIS? Do you know the number or percentage of sheep that are subjected to adverse welfare outcomes from such other poor risk management practices?

Public consultation question 15: Do you know the number or percentage of sheep farming businesses that operate in more than one jurisdiction and how many sheep are likely to be affected? Please provide percentage estimates for various combinations of states and territories.

Public consultation question 16: Do you know of other differences in current state or territory welfare standards for sheep; and if so, what are these?

Public consultation question 17: Do you have information on how many times would a muzzle need to be replaced, on average, over the lifetime of a sheep dog under the proposed standard S5.2?

Public consultation question 18: Do you have any information on single penning sheep operations in Australia affected under the proposed standards in chapter 9?

Public consultation question 19: Do you believe that the net benefits achieved under Option A, including welfare benefits and reduction in excess regulatory burden, are justified?

Public consultation question 20: Do you believe that the net benefits achieved under option B, including welfare benefits and reduction in excess regulatory burden, are justified?

Public consultation question 21: Do you believe that the benefits achieved under Variation C1 of Option B, including the welfare benefits of pain relief with all mulesing and reduction in excess regulatory burden, are justified?

Public consultation question 22: Do you believe that the benefits likely to be achieved under Variation C2 of Option B, including the welfare benefits of requiring mulesing to be performed under 6 months of age and reduction in excess regulatory burden, are justified?

Public consultation question 23: Do you believe that the benefits likely to be achieved under Variation C3 of Option B, including the welfare benefits of banning single penning of sheep and reduction in excess regulatory burden, are justified?

Public consultation question 24: Do you believe that the benefits likely to be achieved under Variation C4 of Option B, including the welfare benefits of banning tethering of sheep and reduction in excess regulatory burden, are justified?

Public consultation question 25: Do you believe that the benefits likely to be achieved under Variation C5 of Option B, including the welfare benefits of mandating pain relief for laparoscopic artificial insemination (LAI) and embryo transfer (ET) and a reduction in excess regulatory burden are justified?

Public consultation question 26: Do you believe that the benefits likely to be achieved under Variation C6 of Option B including the welfare benefits of mandating one free palpable joint with respect to tail-docking procedures and a reduction in excess regulatory burden, are justified?

Prepared by:



On behalf of:

Australian and jurisdictional governments, livestock industries and related organisations.
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